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THE THEORY OF ARGUMENT

MARK VOROBJ

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A Theory of Argument

A Theory of Argument is an advanced textbook intended for students in philosophy, communication studies, and linguistics who have completed at least one course in argumentation theory, informal logic, critical thinking, or formal logic. The text contains 400 exercises.

In this book, Mark Vorobej develops a novel approach to argument interpretation and evaluation that synthesizes subjective concerns about the personal points of view of individual arguers, with objective concerns about the structural properties of arguments. One of the key themes of the book is that we cannot succeed in distinguishing good arguments from bad ones until we learn to listen carefully to others.

Part One develops a relativistic account of argument cogency that allows for rational disagreement. An argument can be cogent for one person without being cogent for someone else, provided we grant that it can be rational for individuals to hold different beliefs about the objective properties of the argument in question.

Part Two offers a comprehensive and rigorous account of argument diagramming. An argument diagram represents the evidential structure of an argument as conceived by its author. Hybrid arguments are contrasted with linked and convergent ones, and a novel technique is introduced for graphically recording disagreements with authorial claims.

Mark Vorobej is associate professor of philosophy and director of the Centre for Peace Studies at McMaster University in Canada.

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MARK VOROBJ

McMaster University



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To my mother

Francka Vorobej (née Rupar)

August 25, 1929–November 4, 1998

Listening is the beginning of peace.

– Elise Boulding

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Preface

This textbook is written for upper-level undergraduate students who have completed at least one prior course in argumentation theory, critical thinking, informal logic, formal logic, or some other related discipline. Part One develops a theory of argument interpretation and evaluation, according to which arguments are viewed as instruments of rational persuasion. Part Two explores how different patterns of evidential support can be identified within a body of information that has been employed argumentatively to secure rational belief.

By devoting two weeks to each chapter, the entire text can be covered, at a reasonable pace, within a single semester. There are 400 exercises within this text. Students who attempt a significant number of these exercises will be rewarded with a substantially deeper understanding of the theory and practice of argumentation.

I am grateful to two anonymous readers, commissioned by Cambridge University Press, for their favorable reviews of a manuscript entitled *Normal Arguments*.

Lyrics from “Paradise by the Dashboard Light” by James Steinman are reproduced in Exercise 4.68(b) on page 220 by permission of the Edward B. Marks Music Company – © 1977.

Most of the material within this text was first explored, in a classroom setting, in conversation with the exceptionally talented students enrolled in McMaster University’s Arts and Science program. I thank these kind souls for their insight, their enthusiasm, and their

unparalleled magnanimity. They have shaped my thoughts in ways that, I am sure, lie far beyond my comprehension. Accordingly, this text is written in a style designed to create the happy illusion of an instructor addressing a class of engaged students.

I have also been blessed with an extraordinarily supportive, patient, and forgiving family. My parents, my sister, my wife, and my three daughters sustain my spirit and are reflected in every aspect of my being – including this humble offering. I thank them for sharing a love that has endured my various abnormalities.

PART ONE

MACROSTRUCTURE

Arguments

1.1 Authors and Audiences

An argument is a social activity, the goal of which is interpersonal rational persuasion. More precisely, we'll say that an *argument* occurs when some person – the *author* of the argument – attempts to convince certain targeted individuals – the author's *audience* – to do or believe something by an appeal to reasons, or evidence. An argument is therefore an author's attempt at rational persuasion. Arguments admit of either oral or written expression, and the statement, or public presentation of an individual argument, is typically a fairly discrete communicative act, with fairly well-defined temporal or spatial boundaries. *Argumentation*, on the other hand, is the more amorphous social practice, governed by a multitude of standing norms, conventions, habits, and expectations, that arises from and surrounds the production, presentation, interpretation, criticism, clarification, and modification of individual arguments.

We'll use the term "author" loosely to refer to any person who, within a particular context, presents an argument for consideration. An author may but need not be the individual (perhaps no longer living or identifiable) originally responsible for the construction of the argument. What matters is that the author, in some sense, endorses the argument as being worthy of consideration as an instrument of rational persuasion on some particular occasion. An individual who merely reports upon the argument of another, or who refers to an argument to

illustrate points in logical theory (a practice we will engage in repeatedly throughout this text), does not endorse the argument in this sense, and is therefore not its author. An author uses her argument as a tool with the aim of altering beliefs or influencing behavior suitably related to the argument's content. She serves as the argument's advocate. We'll allow for the possibility that arguments may have multiple authors, even within a single argumentative context.

An author's (or authors') audience is the person or persons to whom her argument is directed. An author is typically, though she need not be, in direct communication with her audience. It is possible, for example, for an author to address an argument to future generations. We'll also allow for the possibility that one person can simultaneously play the role of both author and audience member, thereby arguing with herself. An individual may construct an argument with the aim of rationally persuading only herself of some claim.

It's helpful to distinguish between two kinds of audiences, i.e., two senses in which an argument can be directed toward specific individuals. Since authors propose arguments with a certain aim in mind, we can define an author's *intentional audience* as being composed of all those individuals whom the author believes ought to be persuaded by her argument. Authors do not always have a precise sense of the membership within their intentional audience. Indeed, an author's beliefs about the identity of her intentional audience can evolve as she develops her argument, and as she struggles to articulate it within the public domain. However, since we take the view that an author is someone who employs her argument as an instrument of rational persuasion, we'll stipulate, as a matter of definition, that an author must believe that there are certain (real or hypothetical) individuals who ought to be persuaded by her argument, i.e. certain individuals for whom her argument is rationally compelling. That is, we'll stipulate that an author's intentional audience must be non-empty. An author must have some person or group of persons in mind, under some description or other, whom she believes ought to be persuaded by her argument, on the basis of the evidence cited. The description involved can be remarkably thin. For example, an author may believe simply that anyone who accepts her evidence ought to be persuaded by her argument. But if you cannot identify anyone for whom, in your judgment, your "argument" is rationally compelling, you cannot genuinely

be engaged in the practice of interpersonal rational persuasion. Whatever else you may take yourself to be doing in offering evidence, you are not, strictly speaking, the author of an argument.

Since argumentation is a social practice, arguments also exhibit a more public dimension. Accordingly, we'll define a speaker's (or writer's) *social audience* as being composed of all those individuals who are perceived, by those witnessing a particular communicative exchange, to be the persons to whom that speaker, qua author, is addressing a particular argument. (If witnesses disagree over this matter, then we'll say that the notion of a social audience is not well-defined in the situation in question.) So a speaker *S* has a social audience just in case those individuals, who are actually witnessing her behavior, perceive *S* to be the author of an argument, engaged in an exercise in rational persuasion with a particular group of individuals. A speaker's social audience is socially constructed in the following two senses: first, in that the identity of that audience depends upon the beliefs and perceptions of individuals other than the speaker herself; and second, in that those beliefs and perceptions are based upon publicly accessible information.

In presenting an argument, an author typically has a social audience, since typically an author is someone who is perceived by others to be engaged in a public attempt at rational persuasion with a certain group of individuals. But whether she is in fact so engaged is a separate matter. No claim strictly about an author's social audience ever entails (or guarantees) anything about that author's personal beliefs concerning what she takes herself to be doing within the public domain. It is possible, for example, that an author may be perceived to be addressing her argument to one individual, when in fact she considers her argument to be aimed at someone else.

It is also possible, though unusual, for a social audience to exist in the absence of an author or an argument. For example, some speaker might be perceived by others to be an author presenting an argument to a particular group of individuals, when in fact that speaker conceives of herself as being engaged merely in the non-argumentative telling of a joke or a story.

Whether someone is a social audience member will depend upon how witnesses, whose behavior will typically conform to prevailing linguistic conventions, interpret a speaker's overt (argumentative)

behavior. These witnesses may, of course, be social audience members themselves, and individuals typically have no difficulty identifying themselves as audience members by attending to a speaker's words or gestures. Authors, for example, sometimes explicitly identify their audience by name, by pointing at or speaking directly to them, by describing them, or by some combination of these and other methods – as, for example, in the familiar greeting “Friends, Romans, countrymen, lend me your ears.” Often, however, social audiences must be identified by attending to more subtle, merely suggestive contextual cues. And just as intentional audiences often have vague boundaries, often the identity of an author's social audience remains imprecise.

Clearly, it is a contingent matter whether, and if so to what extent, an author's social audience, for a specific argument, coincides with her intentional audience. However, an author who is a skilled communicator can often achieve a perfect match. An author can deliberately take steps designed to ensure that her intentional audience will understand, through explicit utterances or public gestures, that they are indeed the individuals who, she believes, ought to be persuaded by her argument.

An author, by definition, aims at rationally persuading certain individuals for whom, she believes, her argument has probative force. But an author has little hope of succeeding in rationally persuading those individuals unless she presents her argument in a way that readily leads them to recognize that a particular argument is indeed being addressed to them. Unless an author crafts her argument in such a way that it “reaches” the people for whom it is intended, she will almost certainly fail in her attempt at rational persuasion. That's why the distinction between intentional and social audiences matters.

By defining two kinds of audiences, we acknowledge the intentional aspect of argumentation while simultaneously recognizing that authors usually aim to fulfil their intentions by communicating with others within a public domain governed, in part, by widely shared linguistic norms. From a logical point of view, the author's intentional audience is the more basic notion. Every argument has a (non-empty) intentional audience, but an argument – for example, one that never appears within the public domain – may fail to have a social audience. And judgments about an author's social audience are generally also conjectures, based upon publicly accessible evidence, about the

identity of that individual's intentional audience. We generally assume that if an author is perceived to be engaged in an attempt at rational persuasion with certain individuals, then she believes that those individuals ought to be persuaded by what she has to say.

EXERCISES

- 1.1 Identify the first argument expressed within this text.
- 1.2 According to our account, not every act of reasoning or every appeal to evidence involves the presentation of an argument. Describe a dozen different kinds of situations within which someone could engage in an act of reasoning or present a body of evidence without being, in our sense, the author of an argument.
- 1.3 Suppose that a single individual is the author of two separate arguments. Under what conditions, if any, could these arguments have different intentional audiences? Under what conditions, if any, could they have different social audiences? Justify your answers.
- 1.4 Describe two different kinds of situations in which an argument, as an attempt at rational persuasion, could exist without being publicly disseminated. In which, if either of these cases, would the argument in question have a social audience?
- 1.5 Suppose that, in a public forum, someone presents (what they take to be) an argument. Explain how it's possible that this argument could fail to have a social audience.
- 1.6 Describe a situation within which an author would very likely misidentify the members of her social audience.
- 1.7 Explain how someone could compose and publish an argumentative essay with a substantial social audience, but an empty intentional audience. Would that individual be the author of the argument expressed within that passage? Justify your answer.
- 1.8 Under what conditions, if any, could an author fail to be a member of her own intentional audience? Justify your answer.
- 1.9 Since an author must (already) believe that the members of her intentional audience ought to be persuaded by her argument, and since an argument is an author's *attempt* at rational persuasion, how can an author argue with (i.e., attempt to rationally persuade) *herself*?

1.2 Propositions

That arguments are offered by and directed toward persons engaged in a contextually embedded teleological exercise is a crucial pragmatic consideration. Viewed from a purely semantic point of view, however, arguments are composed of *propositions*, i.e., claims that are capable of being either true or false, and that can serve as the objects of belief. Propositions are abstract objects that are independent, in various ways, of the particular (written or oral) sentences by which they are expressed. A *sentence* is a grammatical construction that is well-formed according to the syntactic conventions of some specific language. “5 is the square root of 25” and “25 is the square of 5,” for example, are different sentences of English, because they are each well-formed, but composed of different sequences of words. The two sentences express the same thought with the same truth-conditions, however. That is, they share the same meaning. So they express the same proposition – the same bearer of truth values – which does not belong to the English language, is not composed of words, does not exist at any particular time or place, and is not dependent for its existence upon sentential constructions. That proposition is *what* we believe, when we believe that 5 multiplied by itself yields the product 25, regardless of how we express this belief to ourselves or to others. We will follow the standard convention, where sentence *S* expresses proposition *P*, of using *S* as a name for *P*, so that we have a ready means, in English, of referring to propositions.

Being composed of propositions, arguments, too, therefore are, in part, abstract objects. More precisely, arguments occur when individuals *use* certain ordered pairs of abstract objects in a particular way while engaged in an exercise in rational persuasion. The proposition that an author supports by an appeal to evidence, on a particular occasion, is the argument’s *conclusion*; the propositions she uses in offering evidence in support of that claim are the argument’s *premises*. We’ll stipulate that each argument has a single conclusion, and any finite number of premises greater than or equal to one. An argument can therefore be viewed, in part, as an ordered pair, the first member of which is a non-empty, finite set of premises, and the second member of which is a single conclusion. Also essential to an argument is the further claim that the second member of this ordered pair “follows,” in

some fashion, from the first member. An argument therefore involves an *inference* from the premises to the conclusion, based on the conviction that belief in the premises justifies belief in the conclusion.

This approach allows us to capture some basic intuitions concerning the identity conditions of arguments. For example, the following two passages

(A) 5 is a square root of 25. Therefore, 25 is not a prime number.

and

(B) 25 is the square of 5. It follows that 25 is not a prime number.

could express the same argument, even though they are composed of different sentences. The author of the first passage uses certain words in order to draw an inference involving the two propositions expressed by the two sentences she employs. The author of the second passage uses two different sentences to accomplish exactly the same end. In each case, a single inference is drawn from the same premise to the same conclusion, and neither the nature of that inference nor the semantic content of the premise or the conclusion are apparently affected in any way by the authors' choice of words or by the passages' sentential structure. That's why arguments are composed of propositions, and not sentences.

A necessary condition of two persons offering the same argument is that they infer the same conclusion from the same set of premises. A further necessary condition is that they employ the same inference. (That is, if two individuals argue that the same conclusion follows from the same set of premises, but if they disagree about *how* that conclusion follows, then they cannot be offering the same argument.) Together, these conditions are jointly sufficient. So the author of (A) offers the same argument as the author of (B) provided they agree upon how the proposition that 25 is not a prime number follows from the proposition that 25 is the square of 5.

We will be concerned exclusively with arguments that are expressed within natural (rather than formal) languages. Furthermore, all of the arguments considered in this text will be expressed within prose passages of English. It will, accordingly, often require some work to extract a clear representation of an argument from any given prose passage. First of all, it is possible to express a proposition using any kind

of grammatical construction. Interrogative, optative, or exclamatory sentences, for example, can, with appropriate contextual stage setting, be used to express propositions. In the interests of clarity, therefore, it will often be helpful to paraphrase an author's words, in expressing a premise or conclusion, into the form of a declarative sentence that transparently expresses a proposition. Second, not every proposition expressed in an argumentative prose passage occurs within that passage as either a premise or a conclusion, or as (a proper) part of a premise or a conclusion. We'll refer to these propositions, which are neither identical with nor embedded in any premise or conclusion, and to the sentences by which they are expressed, as *noise*. A noisy proposition makes a claim that is extraneous to the content of the argument in question.

Arguments, as noted above, very often have the practical aim of rationally persuading someone to perform (or forbear from performing) a certain action. It is sometimes said that the conclusion of any such practical argument is an action or, less radically, an imperative. Since actions are not propositions, however, and since imperatives often do not transparently express propositions, we will adopt the convention of "translating" the written or spoken conclusion of any such practical argument into a sentence expressing a (true or false) recommendation to perform (or forbear from performing) the action in question. So, for example, a practical conclusion such as "Get thee to a nunnery" will be transformed into some such proposition as "Ophelia ought to get to a nunnery," viewed as a truth bearer. In this manner, practical arguments continue to fall within the purview of this study.

EXERCISES

- 1.10 Explain why we stipulate that an argument's premise set must be non-empty.
- 1.11 Explain why we stipulate that an argument's premise set must be finite.
- 1.12 Is it possible for an argument's premise set to refer to an infinite number of objects? If so, illustrate your answer with an example. If not, explain why not.
- 1.13 Explain why we stipulate that an argument must have a single conclusion.

- 1.14 Describe a context within which a non-declarative sentence can be used to express a proposition. Explain how this is possible.
- 1.15 Repeat exercise 1.14 four more times, using a different kind of non-declarative sentence in each case.
- 1.16 Multiply your age (calculated in months) by itself to obtain a number n . Describe n different ways of expressing the proposition that snow is white.
- 1.17 Explain how it's possible to present two different arguments while employing exactly the same premises and conclusion. Illustrate your answer with an example.
- 1.18 Is it a necessary condition of two authors presenting the same argument that they present it to the same intentional audience? The same social audience? Justify your answers.

1.3 Canonical Forms

An argument appears in *canonical form*, relative to the particular prose passage by which it is expressed, when each of the argument's constituent propositions is named separately in a list by a sequence of declarative sentences, with a sentence expressing the argument's conclusion appearing at the end of the list, separated by a solid horizontal line from the sentences expressing the argument's premises. The solid line represents the drawing of an inference from the premises to the conclusion, and can be read as "therefore." We will follow the further convention of numbering the argument's constituent propositions in the order in which they occur within the prose passage, where it is understood that noisy propositions get numbered in sequence along with the premises and the conclusion, but that no number is to be assigned to propositions embedded within premises or conclusions. (The practice of numbering noise encourages us to read texts more carefully, as we seek propositional candidates to fill the roles of premises and conclusions. The reason for the second qualification is that the semantic content of any proper part of a premise or conclusion has in effect already been incorporated into an argument's canonical form once a number has been assigned to that premise or conclusion as a whole.) In other words, only propositions are assigned a number, and every proposition is assigned a number unless it's embedded within a premise or conclusion.

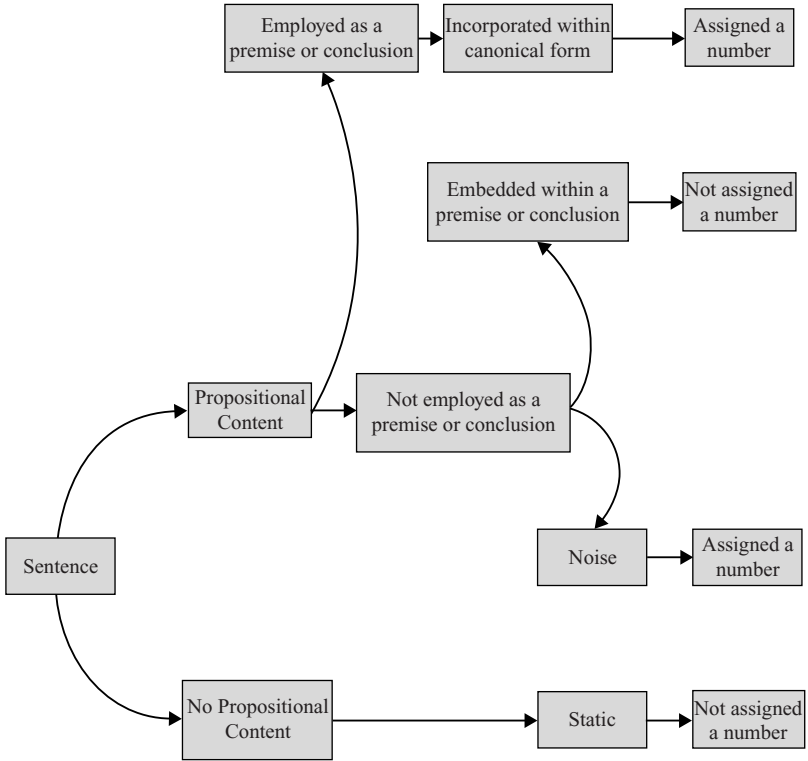


Figure 1.

So, for example, the canonical form of the argument expressed within the passage

- (C) Here's an interesting argument. Rachel has a rat. Since rats relish radishes, she must relish them too. Wow! It's incredible, but there's no way around it.

appears below as

- (D) 2. Rachel has a rat.
3. Rats relish radishes.
-
4. Rachel's rat relishes radishes.

The original passage contains five sentences expressing six propositions. In constructing the canonical form (D), the so-called indicator

word “since” has been discarded, the conclusion has been paraphrased to eliminate a possible ambiguity, and the first, fifth, and sixth propositions (expressed by the first and fifth sentences) have been eliminated as noise. “Noise” is not a pejorative term, and noise is not necessarily unimportant, either to the identity of the argument or to its rhetorical presentation. The sixth proposition, for example, provides important evidence concerning the nature of the inferential link that is claimed, by the author, to obtain between the premises and the conclusion. But noisy propositions are themselves neither premises nor conclusions, in those contexts in which they appear as noise. The fourth exclamatory sentence, by contrast, is not (even) noise, as it does not express a proposition. Therefore, it does not appear as a numbered entry in the canonical form either, but for a different reason: namely, because it is not assigned a number. We’ll refer to this type of material as *static*. For our purposes, static tends to be of less interest than noise.

The following shorter, single-sentence passage expresses the same argument as (C), insofar as the arguments share identical premises and an identical conclusion.

- (E) Rachel has a rat; so she must relish radishes, since rats relish radishes.

However, the canonical form of this presentation of the argument

- (F) 1. Rachel has a rat.
 3. Rats relish radishes.
-
2. Rachel’s rat relishes radishes.

indicates that on this occasion the argument’s conclusion appears as the second proposition asserted within the prose passage (E). More important, it also illustrates the point that an argument’s canonical form bears an essential relation to the manner in which that argument is presented on a particular occasion, above and beyond the identity of its constituent parts. Different canonical forms can exhibit different presentations of one and the same argument.

This result is an immediate byproduct of our earlier decision to number an argument’s constituent parts in the exact order in which they appear within an argumentative text. In adopting this convention, we’re not claiming that the order of propositional presentation

necessarily carries great intrinsic significance (aside from its possible effects on the argument's rhetorical, or persuasive, force). Rather, the convention imposes a uniform constraint on the transfer of information, in this case from a text to an argument's canonical form, which will prove to be especially useful later when we turn to the topic of argument diagramming.

If the same proposition is repeated within a text, then, even if expressed in different words, later occurrences of that proposition should also be assigned the number given to the proposition's first occurrence. The canonical form

(G) 3. Landon lives in Hamilton.

3. Lucy resides in The Hammer.

makes it clear that this argument begs the question. As "Lucy" happens to be Landon's other name, and "The Hammer" is another name for Hamilton, a single proposition, which occurs initially as the third proposition articulated within some unidentified passage, serves as both (G)'s sole premise and its conclusion.

Premises and conclusions that are not explicitly asserted by an author – the so-called "missing" components of enthymematic arguments – can be identified and included in an argument's canonical form through the use of lowercase letters from the beginning of the alphabet, beginning with "a." For example, the argument in

(H) The toast is burning. If it weren't burning, the smoke alarm wouldn't be ringing.

can be represented as

(Ha) 2. If the toast weren't burning, the smoke alarm wouldn't be ringing.
a. The smoke alarm is ringing.

1. The toast is burning.

on the assumption that the argument's author is relying upon a tacit understanding, most likely shared with her audience, that the smoke alarm is ringing. The author, that is, is using (a) as a premise, without explicitly asserting (a).

Propositions of this sort can be incorporated into an enthymematic argument's canonical form at whatever point best captures the "flow" of the argument. Notice that, in (Ha), the conditional "If the toast weren't burning, the smoke alarm wouldn't be ringing" is listed as the single proposition (2). That's because (2) alone is used by the author as a premise. Although they both express propositions embedded within (2), neither the conditional's antecedent nor its consequent are presented by the author as independent claims to which she is committed, or to which she has appealed in compiling evidence in support of the further claim that the toast is burning. Each grammatical construction is a syntactic part of one of the author's premises, but neither is itself a premise. For this reason, being neither premises nor noise, neither construction is assigned a number.

Similar considerations arise in the treatment of disjunctive as well as causal claims. The author of the following argument

- (I) 1. Irrigation is either illegal or inadequate to solve our problem.
 2. If it's illegal, it shouldn't be pursued.
 3. If it's inadequate, it shouldn't be pursued.
-
4. We shouldn't pursue the irrigation proposal.

is not asserting that irrigation is illegal. Nor is she asserting that it is inadequate. Therefore, neither of these propositions ought to be numbered as a premise to which the author is committed.

Causal arguments, however, require a slightly more subtle analysis. The author of

- (J) The jet crashed on take-off on Wednesday because the engines were damaged on landing on Tuesday. Therefore, daily engine inspections would reduce the number of jet crashes.

is committed to the truth of each of the underlined propositions expressed in this passage. However, the second proposition – "the engines were damaged on landing on Tuesday" – cannot plausibly be offered as a premise in support of the first proposition, in contexts where it's obvious to all concerned that the jet did indeed crash on Wednesday. Typically, you don't argue for a claim which (you believe) everyone in your audience already believes. So "because" should not be read as a premise indicator in the first sentence. Neither can the

second (nor indeed the first) proposition plausibly be offered as evidence, on its own, for the third proposition (expressed by the second sentence); and the first and second propositions do not collectively provide much evidence in support of the third proposition unless the two events mentioned within those propositions are claimed to be causally connected. Therefore, since the second proposition is obviously not the conclusion of (J), it follows that the second proposition, although asserted by the author as a claim to which she is committed, does not function as an independent component of the argument. Nor is it noise, since (J) is most plausibly viewed as expressing a single-premise argument, with its entire first sentence expressing a causal premise, and its second sentence expressing its conclusion. Therefore, the second proposition is part of the argument's premise and, accordingly, is not assigned a number.

The careful construction of an argument's canonical form can be time-consuming, especially when dealing with lengthier and more typical argumentative passages. Fortunately, our convention of numbering a text's propositional claims in the order in which they occur can help to facilitate this process. It also allows us to significantly reduce the kind of verbiage so evident in the last paragraph, without sacrificing clarity. Because the following passage from *The Great Learning* by Confucius

- (K) (1) If there be righteousness in the heart, there will be beauty in the character. (2) If there be beauty in the character, there will be harmony in the home. (3) If there be harmony in the home, there will be order in the nation. (4) If there be order in the nation, there will be peace in the world.

is static-and noise-free, and requires no paraphrasing, it's a simple matter to incorporate our numbering system directly into the text itself, and to read off the resulting canonical form (K) without rewriting the entire passage. The one claim that we do need to add to (K), of course, is the implicit conclusion (a): If there be righteousness in the heart, there will be peace in the world. (K), therefore, is an enthymeme composed of five conditional propositions. Again, none of the conditionals' antecedents or consequents are asserted independently as a premise or conclusion.

In the following pages, we'll often number the propositions within an argumentative text in this way, even when, as above, we're quoting from an author. Students will discover that they can complete certain exercises more quickly by similarly inscribing their choice of numbers directly into the text. For ease of reference, we'll also henceforth utilize capital letters liberally to designate either canonical forms of arguments, unaltered prose passages, or, as with (K), prose passages supplemented by numerical entries.

EXERCISES

- 1.19 Roll a fair die twice to obtain an ordered pair of numbers $\langle m, n \rangle$. Construct (a) a passage composed of m sentences that expresses a single argument about Halloween, and (b) an accurate canonical representation of that argument which is composed of n propositions. Identify any static or noise in your solution. (We'll say that an argument, as a whole, is *about* a certain topic just in case its *conclusion* expresses a proposition about that topic.)
- 1.20 Roll the die again and, with the resulting ordered pair, repeat exercise 1.19 by constructing a single argument about the most odoriferous camel in Rajasthan.
- 1.21 Repeat exercise 1.19, with the ordered pair $\langle 1, 1 \rangle$, by constructing a single argument about your birthday.
- 1.22 Roll the die again and repeat exercise 1.19 by constructing a single argument about fractions, where all m sentences are non-declarative sentences.
- 1.23 Roll the die again and repeat exercise 1.19, by constructing a single argument about the relationship between poverty and crime that employs at least one causal premise.
- 1.24 Explain why, in passage (J), the second proposition cannot plausibly be offered as evidence, on its own, for the third proposition.
- 1.25 Describe a situation in which an author might argue in support of a claim that, she believes, the members of her social audience already believe.
- 1.26 Construct two separate argumentative passages about the Mayan civilization, where the conclusion of the first passage appears as noise in the second passage.

- 1.27 Construct an argumentative passage including a noisy proposition that plays a role in establishing the identity of the argument expressed within that passage. Justify your answer.
- 1.28 Explain why no argument can be expressed entirely by noise.
- 1.29 Explain why static cannot appear as a premise in an argument.

1.4 Listening to Persons

The explicit and implicit premises and conclusion of an argument together constitute that argument's propositional *macrostructure*. The purpose of constructing an argument's canonical form is to provide a perspicuous representation, free of static and noise, of that argument's macrostructure *as it is conceived by its author*. Our approach, therefore, is to give primacy to persons over texts. When presented with an argumentative passage, our primary concern, initially, will be to ascertain the specific argument that some author has in mind while she is attempting to communicate with her audience – to understand, that is, how she herself conceives of this particular exercise in rational persuasion. We're more likely to succeed in this project the more familiar we are with the author, and with her background beliefs and intentions.

Language is of course the medium through which arguments are expressed, but we will be interested in the text (or wording) of an argumentative passage, not for its own sake but only insofar as the text provides evidence of the author's beliefs and intentions. In effect, we will initially be reading argumentative texts in order to gain access to another's mind.

This can be a challenging but at the same time very familiar hermeneutical exercise, not different in kind from other common forms of written or oral communication. It is difficult enough to determine what a text is saying literally, but even more difficult to judge what message someone means to convey through that text. It's very easy to make mistakes in the latter enterprise, especially when, as is often the case, the only tangible evidence at our disposal is the text itself, left behind by some now (temporally or spatially) distant and perhaps inaccessible author. Notoriously, texts can reasonably support multiple conflicting interpretations. And problems of textual interpretation are of course compounded by the fact that, for a variety of reasons,

people often say what they don't mean, and may mean what they never explicitly say.

Nonetheless, these hermeneutical risks must be undertaken if we take seriously the role that persons play in the practice of argumentation. Suppose someone is attempting to rationally persuade you to adopt a certain belief. Their goal is not simply that you adopt just some belief or other, but that you adopt the conclusion they specifically have in mind, and that you adopt that conclusion on the basis of the evidence cited within the premises of their argument. Authors are individuals who have deliberately chosen rational over non-rational means of persuasion; and, in guiding their audience toward a specific conclusion, they have a specific evidential path in mind. Their end, therefore, is partly constituted by their means. Authors do not aim to create situations in which audience members believe conclusions either for no reason or for the wrong reasons. A precondition of an author's achieving her goal, therefore, is that you understand the argument that she understands herself to have presented to you.

This is not to say that you should be persuaded by every argument that is presented to you. Nor is it to deny that an author's words may sometimes suggest, to an audience member, further arguments that depart, more or less significantly, from the author's intentions. Nor that these further arguments may be worthy of consideration in their own right, and perhaps eventually even of great interest to us, in our pursuit of truth, rational belief, and judicious behavior. It does mean, however, that the integrity of any particular argumentative exchange presupposes that audiences are willing and able to engage with another mind, and are prepared to attend carefully to the words of another as a vehicle toward understanding that person's goals, beliefs, and intentions.

Since an argument is an *attempt* at rational persuasion, authors enjoy certain privileges over audience members. Authors can unilaterally select their intentional audiences – the interested or disinterested, receptive or unreceptive, cooperative or hostile individuals to whom their arguments are directed. While audiences can examine the writings of any author, they cannot select the targets of an author's argument; in particular, they cannot unilaterally transform themselves into intended targets. But audience members in turn are of course at liberty to ignore an author's argument. They can ignore

the argumentative setting in its entirety, or they can choose to pay heed just to the argumentative text while ignoring the text's author. Either option, however, defeats the original argumentative proposal. It is not possible, that is, for an audience member to participate fully in the practice of *interpersonal* rational persuasion without acknowledging the role played by the authorial mind in creating the conditions for the very possibility of that exercise. Listening, therefore, is a central and constitutive feature of the practice of argumentation.

In this text, we will concentrate our efforts, initially, on listening, and on attempting to understand the personal point of view of another, as expressed while acting in her capacity as the author of some argument. This requires patience, and at least a touch of humility – characteristics not greatly encouraged by our culture, and for which we humans are not particularly well programmed. Listening is a skill that, no less than other more widely appreciated communicative skills, requires practice. It's remarkably difficult to understand clearly what another person is saying, whether in speech or in writing. This is shown by the remarkable frequency with which we misunderstand one another.

Our view, nonetheless, is that persons are worth listening to, even though listening is often slow and difficult work. Each of us desperately needs the assistance of others for there to be any reasonable prospect of arriving at truth, or at least rational belief, on any of a wide spectrum of issues that deeply concern us. Admittedly, much of this assistance can and should occur outside of argumentative contexts. But the practice of argumentation is designed specifically to yield rational belief, especially on complex or controversial matters, and so argumentation provides an ideal forum within which individuals can offer mutual assistance in realizing this end. Insofar as we are interested in the promotion of rational belief, each of us has an interest in participating in the practice of argumentation. Indeed, our ability to acquire rational beliefs would be very seriously compromised were we, as individuals, to lose access to this practice.

Cultures that fail to promote the practice of argumentation – perhaps by actively discouraging individuals from listening carefully and responding critically to what others have to say about what they believe, and why they believe it – help to undermine their members' capacity for critical judgment. These individuals are likely to hold fewer rational

beliefs and to be less capable of defending those beliefs against challenges. There are likely to be non-epistemic ramifications as well. The lives of these individuals will almost certainly be harmed or disadvantaged in numerous other ways. A great many goods that contribute to sentient well-being are dependent upon the flourishing of rational belief and the public practice of critically scrutinizing one another's convictions. Arguably, therefore, the more that argumentation flourishes as a social practice, the better off we all are.

We have argued, over the last few paragraphs, that listening is a constitutive feature of the practice of argumentation, and that our lives will likely go better if we listen to and argue with others within the context of a healthy social practice of argumentation. Happily, it is also true that the practice of listening itself promotes the practice of argumentation.

Argumentation is an essentially cooperative enterprise. Arguers play certain functional roles within an argumentative context, and there are distinct goods associated with each of these roles. Authors are committed to the inculcation of rational belief in audience members, who in turn, when engaged by an argument, are receptive to the possibility of being persuaded to alter their beliefs through an appeal to evidence. By achieving these goals, each can benefit, in different ways, from the practice of rational persuasion. But each party genuinely needs the participation of the other in order to realize these benefits. In fact, certain goods are achievable only if everyone benefits. For example, an audience member can be rationally persuaded by an author's argument only if the author's attempt at rational persuasion is successful. So each party has an interest in working cooperatively with the other.

Furthermore, the practice of argumentation is likely to yield greater benefits, in the long run, if the individuals involved regularly alternate playing the roles of author and audience member – acknowledging, in effect, their willingness to listen to and learn from the point of view of another person. This switching of roles, too, requires coordination.

Cooperation is more likely to occur and to be more sustainable within an environment of mutual respect. In helping to create such a climate, listening promotes cooperation and the flourishing of the

practice of argumentation. Listening provides us with an opportunity to show respect toward others, in a very tangible manner, by giving their views and their arguments a fair and considered hearing. We can respect someone by demonstrating a genuine interest in hearing precisely what they have to say, especially if they appreciate that this may take some time and effort on our part, and that we are willing to make that commitment.

Furthermore, conflicts inevitably arise within any collective undertaking, and arguers may find themselves in conflict over issues which transcend, though they may be related to, the particular argument under consideration. It is more likely that a cooperative spirit will be maintained throughout and beyond any such conflict if that conflict occurs within a climate of mutual respect. There is little hope of successfully resolving a conflict, without damaging interpersonal relations, unless serious attention is paid to understanding how the individuals in conflict themselves perceive their own situation. So arguers who are skilled and interested in listening to each other, and not just to each other's arguments, will more likely establish a cooperative relationship of mutual respect, and their strictly argumentative relationship will more likely survive as a result.

To be sure, practical considerations, such as time constraints, may interfere with our interest in giving primacy to persons over texts. Sometimes our interest in listening will and ought to be overridden by other more pressing or more significant concerns. Nonetheless, this text will explore what it means, in an argumentative context, to listen to persons – both when the exigencies of our lives merely allow for this, as well as when they demand it.

EXERCISES

- 1.30 Explain why the author of an argument cannot unilaterally select her own social audience.
- 1.31 Is it possible that rational belief can flourish within an authoritarian culture that strongly discourages individuals from critically reflecting upon the content and credibility of their beliefs? In answering this question, be sure to clarify your understanding of the notion of rational belief.

- 1.32 Find a partner, flip a fair coin once, and roll a fair die once to obtain a number n . If you won the coin toss, write an n -page (double-spaced) argumentative essay in support of the claim that “the more that argumentation flourishes as a social practice, the better off we all are.” If you lost the coin toss, write an n -page (double-spaced) argumentative essay critically responding to your partner’s essay.
- 1.33 Repeat exercise 1.32, this time with a different partner, and with respect to the claim that there are certain contexts within which the practice of argumentation would either interfere with our ability to acquire rational beliefs or fail to promote sentient well-being.

1.5 Clarity and Accuracy

The two key virtues of a canonical form are clarity and accuracy. An argument’s canonical form should clearly and accurately depict that argument’s propositional macrostructure, as conceived by the argument’s author. Ideally, each numbered constituent within an argument’s canonical form expresses exactly one proposition – one discrete bit of information – to which the author is committed, and that she has employed as either a premise or a conclusion. Clarity can be enhanced by ensuring that the content of any such claim is evident from the expression of the proposition itself, without having to refer to other information expressed within the argument, or to the argumentative context. So, for example, each proposition within

- (L) (1) And now she was home. (2) Nowhere on Earth was she so much a stranger as here, because (3) she ought to feel at home here, but (4) she could not.

a passage from Orson Scott Card’s *Shadow of the Hegemon*, makes a claim about the fictional character Petra’s relation to her home, without explicitly saying so. Within a canonical form, these oblique references should be clarified. Notice that proposition (1), the textual claim that in part makes those references possible, can be eliminated from the

canonical form as noise, once we've substituted proper names for pronouns and indexicals.

- (M) 3. Petra ought to feel at home at home.
4. Petra could not feel at home at home.

2. Nowhere on Earth was Petra so much a stranger as she was at home.

We have stipulated that an argument involves a single inference to a single conclusion. Numerous arguments, therefore, can occur within even very short passages and, again for the sake of clarity, each argument ought to be represented by a distinct canonical form. Gary Hamilton's comments, quoted in the December 2001 issue of the *Utne Reader*,

- (N) (1) Our sense of germs is highly biased. (2) We see how they make us sick but (3) not how they keep us healthy. . . . Thus, (4) in fighting a no-holds-barred war on germs, we may be making a big mistake.

therefore ought to be represented as follows

- (O) 2. We see how germs make us sick.
3. We don't see how germs keep us healthy.

1. Our sense of germs is highly biased.

- (P) 1. Our sense of germs is highly biased.

4. In fighting a no-holds-barred war on germs, we may be making a big mistake.

where proposition (1) serves as both the conclusion of the first argument and the sole premise of the second argument. In cases such as this, we'll refer to (4) as the *principal* or *main* conclusion of the argumentative passage.

Perfect clarity, however, is often neither attainable nor desirable. In fact, our concern with clarity should never trump our overriding concern, in constructing canonical forms, with descriptive accuracy.

Authors often assert vague claims, for example, and these claims may be precisely what those authors have in mind. So the canonical form

- (Q) 1. Panthers are one of the largest cats.
 2. Large cats are frequently in danger of extinction.
-
3. Panthers are probably an endangered species.

for example, need not be revised in any way, provided it's an accurate description of the author's beliefs and intentions. (Here we're assuming that vague propositions are nonetheless still propositions, insofar as they can take on truth values and serve as the objects of belief.)

An even greater obstacle to (perfect) clarity resides in the fact that authors often present arguments without having a clear conception in their own minds of which proposition they're arguing for, or what body of evidence they're appealing to in support of their conclusion. This can occur for any number of reasons. Sometimes authors argue in a hurried, fairly unreflective fashion. A parent who, in frustration, argues with her child as follows

- (R) (1) Rachel, you really ought to clean your room. (2) It's an awful mess.

may very well conceive of herself as having presented Rachel with a good reason for her to clean her room. However, she may concede in a quieter moment that (2) in itself provides no evidence in support of (1) – the mere fact that a room is clean is no reason to mess it up either – and it's possible that she may not be able, even upon reflection, to articulate any further unexpressed premises upon which she was tacitly relying at the time. That is, the author of (R) may genuinely be claiming that (1) follows from (2) without having any clear conception of precisely *how* it follows.

Curiously, this phenomenon can also occur in arguments arising out of prolonged, complex, and careful deliberations. In *The Population Explosion*, Paul and Anne Ehrlich quote the following passage from a 1985 declaration, signed by more than forty world leaders, entitled "Statement on Population Stabilization":

- (S) Degradation of the world's environment, income inequality, and the potential for conflict exist today because of overconsumption and overpopulation. If . . . unprecedented population growth continues, future generations of children will not have adequate food, housing, medical care, education, earth resources, and employment opportunities.

This is a very dense argumentative passage, with a substantial set of causal premises and an even larger set of conditional conclusions. The passage most likely expresses many separate arguments. Unfortunately, it is not clear, from this passage alone, exactly how these arguments are structured. It is possible, of course, that these issues are clarified in the full text of the "Statement." It is also possible, however, that the authors of this text did not have a firm and detailed conception of the macrostructure of their own various arguments. And there may be important political reasons, in this case, for not having insisted on greater clarity among themselves. Fine-tuning of the argument might have created politically unproductive dissent.

We'll say that an argument, such as (R) or (S), is *embryonic* just in case there is no fact of the matter as to its precise identity. Every argument involves a finite set of premises, a single conclusion, and an inferential claim to the effect that belief in the truth of the argument's premises justifies belief in the truth of the argument's conclusion. However, an author can sometimes succeed in constructing an argument without having a perfectly clear conception of that argument's constituent parts. An author may be unclear about the exact nature of the evidence to which she is appealing, the specific propositional content of her conclusion, or the precise sense of justification involved in her inferential claim. There may therefore be a kind of "metaphysical" indeterminacy about her argument, an indeterminacy, that is, which affects the identity of the argument itself and is not reducible to any epistemological difficulties that individuals – either audience members or the author herself – may experience in attempting to ascertain the identity of the argument in question.

Therefore, an embryonic argument occurs when someone succeeds in constructing an argument that has fuzzy or indeterminate parts, and where there is nothing to which anyone can in principle appeal in order to resolve any such indeterminacy, i.e., to identify precisely

the nature of the argument's constituent parts. To be sure, sometimes an author's unclarity about her own argument may be so significant or extensive that it defeats her very attempt to construct an argument. However, in this text we will not attempt to provide a theoretical distinction – even a fuzzy distinction – between fuzzy, genuine (embryonic) arguments and failed attempts at argumentation. It is enough, for our purposes, to recognize that it's unreasonable to insist that the author of every bona fide argument must have a fully determinate conception of each of her argument's constituent parts.

The existence of embryonic arguments can therefore place a theoretical limit on the amount of detail we ought to incorporate into an argument's canonical form, in our search for an accurate rendering of an author's conception of the macrostructure of her own argument.

EXERCISES

- 1.34 Identify the various sources of vagueness within the propositional content of (Q), (R), and (S).
- 1.35 Describe a set of conditions under which the text of (R) could be used to express an enthymematic, non-embryonic argument.
- 1.36 Describe a set of conditions under which the text of (R) could be used to express an enthymematic, embryonic argument.
- 1.37 Describe a set of conditions under which the text of (R) could be used to express a non-enthymematic, embryonic argument.
- 1.38 Describe a set of conditions under which the text of (R) could be used to express a non-enthymematic, non-embryonic argument.
- 1.39 Describe a set of conditions under which some text could be used to express a non-enthymematic, embryonic argument with no vague propositional components. Illustrate your answer with an example.
- 1.40 Give another reason, not offered in the text, why perfect clarity is sometimes not desirable in the practice of argumentation.

1.6 Charity

In listening to an author while attempting to ascertain how she conceives of her own argument, we can appeal, in principle, to three

bodies of evidence: our beliefs about the wording and the syntactic or semantic features of the argumentative passage; our beliefs about the context in which that passage occurs; and our beliefs about the author's beliefs about any number of relevant matters – including the beliefs, intentions, and expectations of her audience members. Together, these sources provide an extremely rich evidential pool upon which to base our constructions of canonical forms. The evidential base can be so rich, in fact, as to yield bits of conflicting, even contradictory evidence. A literal reading of (3) below, for example,

- (T) Yet (1) Brutus says he was ambitious, and sure (2) he is an honorable man. (3) I speak not to disprove what Brutus spoke, But (4) here I am to speak what I do know.

contradicts what we know, from the rest of *Julius Caesar*, to be Mark Antony's true intentions: to praise Caesar, and indeed to disprove Brutus's claim that Caesar was ambitious. This contradiction is of course easily resolved by adopting a non-literal reading of (3).

Here Shakespeare presents us with an informational glut. A more common scenario, however, especially when dealing with short prose excerpts wrenched out of context from unfamiliar texts, occurs when our evidential base is severely restricted. We may, for example, have little if any information about the argumentative setting or the author's general beliefs beyond what can be gleaned from the wording of the passage itself. In addition, the author may be inaccessible, and so unable to provide clarification.

When faced with very substantial informational anomalies – serious gaps or gluts – the most reasonable course of action may be to suspend judgment on interpretational matters, i.e., to admit that we either don't know enough, or have access to too much conflicting evidence, to be able to arrive at a reasonable judgment as to whether someone is in fact presenting an argument within a particular passage, or, if they are, what the components of that argument might be.

But a suspension of judgment is, of course, not inevitable in the face of uncertainty. Other things being equal, if we're seriously interested in engaging with an argument, we want to attain as much clarity as possible regarding that argument's macrostructure. So it seems reasonable to allow some room here for the exercise of sound judgment, even if this means making educated guesses that go beyond what the evidence

strictly supports. At the same time, we're not prepared flagrantly to sacrifice accuracy – our overriding concern – for (greater) clarity. This suggests the following interpretational strategy.

When presented with a text, search for a descriptive interpretation of it that is well-supported by the total body of available evidence, and at least as well-supported as any competing interpretation of the passage. That is, what we're looking for is an interpretation that passes a certain evidential threshold, entitling us to have confidence in the accuracy of that interpretation, and that cannot be dismissed because of any better supported competing interpretation. Given any text, one of three possibilities will emerge. We may arrive at zero, one, or more than one such interpretation.

If there is no such (supra-threshold) interpretation, then the evidence at our disposal must be so meager that it is unable to sustain any interpretation we would be entitled to view confidently as an accurate description of the author's conception of the passage in question. In this case, one should suspend judgment and confess ignorance as to the intended meaning of the text.

If exactly one such interpretation emerges, it qualifies as the (supra-threshold) interpretation *best* supported by the available evidence. This interpretation, which may be either argumentative or non-argumentative, is the interpretation we should adopt in this scenario.

If more than one such interpretation emerges, each qualifies as *one of the best* (supra-threshold) interpretations supported by the available evidence. These interpretations are, in effect, (roughly) tied on evidential grounds. Here it is reasonable to appeal, on grounds of fairness, to *the principle of charity*. In its most generic sense, "charity" means giving someone the benefit of the doubt. So, where competing interpretations of a passage are well-supported by the evidence to a roughly comparable degree, charity instructs us to attribute to the author of the passage that interpretation which is the *strongest*, or most defensible interpretation. To opt deliberately for any other reading is unfair to the author, needlessly harsh and mean-spirited. When we're interested in describing the behavior of an individual whom we conceive to be engaged in an attempt at rational persuasion, we ought to endorse that description – compatible with the evidence at hand – which, other things being equal, holds out, for that author, the greatest prospect of her succeeding in that endeavor. Since this strategy is motivated by

a concern that reflects the author's own personal aspirations, in this case charity is but a further manifestation of our interest in descriptive accuracy.

Therefore, when the evidence cannot decide between competing interpretations, charity may decide for us. In principle, charity can adjudicate competitions between two or more argumentative readings, between two or more non-argumentative readings, or between a mixture of argumentative and non-argumentative readings – provided we have some common standard by which to compare the respective strengths of these various interpretations. At an intuitive level, we do this all the time. It often makes sense to prefer, on charitable grounds, a narratological over an argumentative reading, for example. As a narrative, a certain passage may read as a coherent description of a series of causally related events, whereas read as an argument, the passage may appear nonsensical. Other things being equal, the former interpretation is more defensible.

In a similar vein, it's tempting to read the following passage by Wayt Gibbs, from the November 2001 issue of *Scientific American*,

- (U) Even invertebrates known to be extinct often go unrecorded: when the passenger pigeon was eliminated in 1914, it took two species of parasitic lice with it. They still do not appear on IUCN's [species extinction] list.

as an argument, since it exhibits the familiar form of a controversial claim followed by evidence for that claim. However, since that argument would be extraordinarily weak, it's more charitable to view Gibbs's comment about the parasitic lice as constituting merely a captivating illustration, rather than any kind of proof of the passage's opening claim. Because our focus in this text is on argumentation, in what follows we'll restrict our attention to applications of the principle of charity between competing argumentative readings.

The principle of charity is a powerful and complex interpretational tool, and much of its power derives from its vagueness. The principle itself, for example, says nothing about what factors contribute to the strength of an argument, or how either conflicting or complementary factors ought to be weighed in arriving at a judgment of global, or overall, strength. Nor does the principle provide any guidance regarding the determination of how much evidential support is required before one is entitled to have confidence in the accuracy of any

given interpretation. Charity, therefore, can reasonably be employed in different ways, and in the face of reasonable disagreement over these issues.

However, when we're deciding between competing argumentative interpretations of some text, each application of the principle of charity is driven by a desire for greater clarity about the identity of the argument in question. Charity applies when we're unsure of the exact composition of the argument being presented by some author. But, *ex hypothesi*, each competing reading of the argument is comparably well-supported by the available evidence, so we have no compelling reason to prefer any one reading over the others – no reason, that is, to consider one reading as being the most accurate representation. Given the nature of our project – specifically, our interest in constructing canonical forms – it is necessary (at least provisionally) to settle on one particular reading. So charity instructs us to give the author the benefit of the doubt, and to select the strongest argument as a reasonable description of the argumentative proposal as conceived by its author. It would be best if we never had to invoke charity, as this principle can certainly lead us astray, away from descriptive accuracy. But we appeal to charity only when we have no reason to believe that this will in fact result from its application.

Applying charity in this manner allows us to focus on the strongest argument an author could possibly be offering in the passage under consideration that is consistent with the total body of available evidence. This approach simultaneously honors our commitment to listening, while serving us well in our pursuit of rational belief. The stronger the argument, the more likely we can learn from it. So charity is not driven solely by moral considerations. When we invoke charity, our focus is not on the best argument that *we* can extract from the passage, but on the most rationally compelling case that the author most likely had in mind. Therefore, we have to resist the (natural and often strong) temptation to impose *our* interpretation on the passage, if listening to the author is to remain paramount. But we listen with a keen interest in discovering truth, guided in that pursuit by a genuine conviction that it is likely that others can assist us, perhaps in ways we cannot currently comprehend, if only we make the effort to hear what they have to say. Of course, if we discover that we are disappointed with the best some author has to offer, we are free to try to do better – to become the authors of more compelling arguments.

Charity is what mandates the addition of premise (a) to argument (H) above. Without (a), a literal reading of the macrostructure of (H) would make no sense and have no probative force. However, the inference to (Ha)'s conclusion is exceptionally strong. So the addition of (a) is relatively unproblematic, especially since it is strongly suggested by the wording of the text and the form of the argument. That's why (H) so naturally reads as a persuasive argument even without the explicit mention of its missing premise.

In other cases, the exercise of charity requires us to dig deeper. A quick reading of

- (V) (1) Minnie owns the only Mustang in Maniwaki. (2) A Mustang owner will soon marry Max. So (3) Minnie will soon marry Max.

has a certain superficial plausibility. (1) and (2) on their own provide some evidence in support of (3). And no grammatical construction within (V) immediately suggests, as was the case in (H), the addition of any further component to the argument's macrostructure. Nonetheless, a little reflection reveals that the argument can be strengthened considerably by the addition of the claim that (a): The person who will soon marry Max, namely the Mustang owner referred to in (2), lives in Maniwaki. Should we incorporate (a) within (V), to generate the canonical form (Va)?

- (Va) 1. Minnie owns the only Mustang in Maniwaki.
 2. A Mustang owner will soon marry Max.
 a. The person who will soon marry Max lives in Maniwaki.
-
3. Minnie will soon marry Max.

That's a hard question to answer. Max's future spouse could in principle live anywhere, and (1) is the only premise within (V) that makes any mention of either Minnie or Maniwaki. So (V) in fact provides only very slim evidence of any connection between Max and Minnie. On the other hand, (Va) is a very strong argument, since (2) and (a) entail that a Mustang owner from Maniwaki will soon marry Max – thus, via (1), establishing a very substantial connection between Max and Minnie.

That (Va) is stronger than (V) is, on our interpretation of charity, no reason *by itself*, however, to attribute (Va) to the author of the

passage. (Doing so, for that reason alone, would undermine our interest in descriptive accuracy, and our focus on listening.) Charity dictates making this attribution just in case (Va) is not only stronger, but also supported by the total body of available evidence at least as well as (V), as a (supra-threshold) interpretation of the argument as conceived by its author. In practice, this means determining whether the evidence gives us reason to believe that the author of the passage in question is actually employing (a), in some manner, as evidence to which she is committed, in constructing an argument in support of (3). That is, is she in fact using (a) as a premise without explicitly mentioning it?

That is also a difficult question to answer for a number of reasons. In this example, we have no information about the context within which the argument is offered, the author is not identified, and (a) makes a claim about a specific individual with whom we are also unfamiliar. Nonetheless, it may be possible to resolve this issue in the following manner. Suppose we know just enough about the author, her argumentative skills, and her beliefs about the beliefs of her audience to make it reasonable for us to assume that, within this argumentative context, it is *not* the case that she is *more likely* to be presenting her audience with a very weak, rather than a very strong, argument. That is, suppose it's reasonable for us to assume that it is at least *as likely* that she is presenting (Va), rather than (V). Since we therefore have no reason to prefer either reading on strict evidential grounds, charity instructs us, given that our choice is between just these two reasonable interpretations, to attribute the stronger argument (Va) to the author.

This line of reasoning makes no reference to the specific content of (a) beyond the fact that (Va) is the stronger argument. Sometimes, however, we can argue more directly in support of adding premises to an argument's macrostructure, when those premises involve appeals to common, widely accepted background beliefs. For example, perhaps audience members can be expected to recognize Max as a reclusive Maniwaki resident who is unlikely to meet, never mind marry, a non-resident. In this circumstance, it would be reasonable to suppose that the argument's author is employing (a) as a premise.

(V) would also be strengthened by the further claim that (b): The only Mustang in Maniwaki has a single owner. Is it reasonable to add

(b) to (V), even though this claim is even less directly suggested by the text? It could be, if only because it's widely recognized that most cars owned by people about to get married have a single owner. This claim strengthens the argument, as it rules out the (remote) possibility that the Mustang owner who will soon marry Max owns the same Mustang that Minnie owns, without being Minnie. Furthermore, there's no reason to believe that Minnie's Mustang is an exception to the general rule. So adding (b) to (V) probably does not distort the author's intentions, since she probably tacitly assumed (the very plausible claim) that no one but Minnie owns the sole Mustang in Maniwaki.

So this interpretation is well-supported by the evidence, and by an appeal to charity. In fact, (Vab) is arguably at least as well-supported by the evidence as either (V) or (Va). Therefore, provided we have no reason to strongly prefer any one of these interpretations on evidential grounds, we should attribute (Vab), the strongest of the three arguments, to the author. Nonetheless, whenever we add any proposition to a canonical form, we should recognize that this reflects a conscious decision on our part – something readily highlighted by our conventions surrounding the naming of the unexpressed components of enthymemes – and be clear about what justifies that decision.

Clearly, there's nothing even remotely resembling an algorithm governing the application of the principle of charity. Indeed, charitable considerations can pull us indeterminately in different directions. In the argument

- (W) 1. Koshka is Kira's pet.
 2. Koshka is a kitten.
 3. Kittens are cute.

4. Kira's pet is cute.

proposition (3) is quantificationally ambiguous. There is some reason to interpret (3) as the claim that every kitten is cute, since this generates an extremely strong inference. On this interpretation, the truth of each of (W)'s premises guarantees the truth of (W)'s conclusion. On logical grounds, Kira's pet simply cannot be a counterexample to the generalization articulated in (3). On the other hand, (3), so interpreted, is an extremely controversial claim. A weaker claim

to the effect that, say, most kittens are cute is more likely to be true, and less likely to be challenged by audience members. Other things being equal, that's a good thing. However, on this reading (1)–(3) provide considerably weaker evidence in support of (4). Other things being equal, that's a bad thing. Charity instructs us to adopt that reading of (3) which results in what is, on balance, the stronger global interpretation of (W), without itself identifying which reading that might be.

We'll therefore allow for the possibility that the dictates of charity may be indeterminate. On the basis of the limited information available concerning (W), for example, it may not be possible to arrive at a reasonable and informed decision as to which of the two interpretations is stronger. Perhaps neither argument is, on balance, stronger than the other. Or perhaps there just is no fact of the matter in this case.

EXERCISES

- 1.41 Explain why passage (U) expresses a weak argument.
- 1.42 Consider the claim that (c): Max will soon get married in Maniwaki. Assess the comparative strengths of arguments (V), (Va), and (Vc). Which reading(s), if any, would charity favor? Justify your answer. (Identify any assumptions you are making about the argumentative context.)
- 1.43 By invoking the principle of charity, argue in support of the claim that the following argument contains a missing premise: "Everyone in the room is a student. Therefore, everyone in the room is in debt."
- 1.44 Assume that the following enthymeme is missing a single premise: "Lucy is a Latvian Libra, so she must be likable." Identify four plausible candidates for that missing premise. Explain the justification for adding each premise, and argue in support of your preferred candidate.
- 1.45 Repeat exercise 1.44 with respect to the argument: "Angola has a huge foreign debt, a long history of civil war, and a low literacy rate. It stands to reason that Angola has a high infant mortality rate as well."

- 1.46 On the assumption that each of the following passages expresses at least one argument, construct a fair and accurate canonical representation of the argument(s) expressed within each passage. Identify any static or noise. Identify and justify any applications of the principle of charity.
- (a) "Pray, for all men need the aid of the gods." – Homer
 - (b) "Since language is the expression of thought, clear language is the expression of clear thought." – A. P. Martinich, *Philosophical Writing: An Introduction*
 - (c) "We've emerged and evolved in the bacterial world and to try and get rid of bacteria is to try to get rid of the world." – Stuart Levy, quoted in *The Utne Reader*, December 2001
 - (d) "If you find yourself writing a sentence or paragraph that is grammatically out of control, you are probably trying to express a thought that you do not have under control." – A. P. Martinich, *Philosophical Writing: An Introduction*
 - (e) "Samaha asked his uncle, 'Will you come to my wedding?' 'You're one of us and the nail clings to the flesh,' answered Khidr without hesitation." – Naguib Mahfouz, *The Harafish*
 - (f) "Why then should we bother about our dreams? Because our dreams can provide insights that often elude us in our waking lives. They can protect us from danger. Divert us from a wrong course. Show us how to pray. Hold a mirror to our souls. Help us say good-bye. They can even be a source of healing." – Ann Spangler, *Dreams: True Stories of Remarkable Encounters with God*
 - (g) "Therefore, the life according to reason is best and pleasantest, since reason more than anything else is man. This life therefore is also the happiest." – Aristotle, *Nicomachean Ethics*
 - (h) "Thus we shall have to investigate purely a priori the possibility of a categorical imperative, for we do not have the advantage that experience would give us the reality of this imperative." – Immanuel Kant, *Foundations of the Metaphysics of Morals*
 - (i) "Do not call the Tathagata by His name nor address him as 'friend,' for He is the Buddha, the Holy One. The Buddha

looks with a kind heart equally on all living beings, and they therefore call him 'Father.' To disrespect a father is wrong; to despise him is wicked." – *Mahavagga*, I.6

- (j) "There is something mock-heroic about the stance that death is not an evil. If it is not an evil, then there seems to be a corollary, which is that there is nothing especially bad about killing; or, if there is something bad about killing, it is because it is bad for the relatives or friends. Yet the prohibition against killing has a central place in almost any morality." – Simon Blackburn, *Being Good*
- (k) "The world produces more than enough food to feed its six billion people. The issue . . . is getting that food to the most hungry. . . . For example, about 12.8 million people in six African countries are at risk of starving because of drought, floods, government mismanagement and economic instability." – *The Hamilton Spectator*, June 10, 2002
- (l) "The Rajneeshee's [1984] attack did not attract much attention. It occurred before the days of competing twenty-four-hour cable news shows. . . . But the attack was nonetheless significant. It was the first large-scale use of germs by terrorists on American soil." – Judith Miller et al., *Germs: Biological Weapons and America's Secret War*
- (m) "If all forms of human life were entitled to equal protection under the law, then most teenage boys would be committing murder several times a week by killing large numbers of sperm." – Paul and Anne Ehrlich, *The Population Explosion*
- (n) "There were thirty blacks with Balboa when he discovered the Pacific Ocean; blacks accompanied Pizarro to Peru, Coronado to New Mexico, Narvaez and Cabeza de Vaca in their explorations of what is now Arizona and New Mexico. Blacks also accompanied the French explorers to Canada and the Mississippi River valley. Thus blacks were a part of the New World long before the *Mayflower*." – Julius Lester, *To Be a Slave*
- (o) "Watching, Juna realized that those patterns had meaning. The aliens communicated visually. Her heart sank. If the aliens' language was visual, it would take a long time for her

- to learn to communicate with them.” – Amy Thomson, *The Color of Distance*
- (p) “You must love the desert, but never trust it completely. Because the desert tests all men: it challenges every step, and kills those who become distracted.” – Paulo Coelho, *The Alchemist*
- (q) “There must be something solemn, serious and tender about any attitude which we denominate religious. If glad, it must not grin or snicker; if sad, it must not scream or curse.” – William James, *The Varieties of Religious Experience*
- (r) “She would leap into the sea. Its waters would take her home, or they would swallow her. Either way, she would find peace. Her loneliness hurt her like some sickness of the body, some pain that her special ability could not find and heal.” – Octavia Butler, *Wild Seed*
- (s) “But we had better turn to the case, gentlemen; tell me, what made you publish that article? There isn’t a word in it that isn’t slander; so that to my thinking, gentlemen, you’ve done something mean.” – Fyodor Dostoevsky, *The Idiot*
- (t) “And I sit, and have a poet. What a destiny. There are perhaps three hundred people in the room now, reading; but it is impossible that each single one of them should have a poet. (Heaven knows what they have.) There aren’t three hundred poets. But just see, what a destiny: I, the poorest, perhaps, of all these readers, a foreigner: I have a poet.” – Rainer Maria Rilke, *The Notebooks of Malte Laurids Brigge*

1.7 An Illustration

It would be unrealistic and counterproductive to insist that every argumentative passage either can or ought to be correlated with a unique underlying canonical form. Information can be packaged in different ways, and any set of interpretational strategies, no matter how detailed or precise, will inevitably require the exercise of sound judgment. There will always be hard cases. Accordingly, we will be satisfied if, given a particular text, we are able to construct a canonical form of the argument, presented within that text, which the author of the

argument would sincerely endorse as a clear and accurate representation of her argument, were she able to read and understand it.

The following passage from Jay Ingram's regular science column, which appeared in *The Toronto Star* on January 13, 2002, illustrates the kinds of choices we often face in dealing even with only moderately complex texts. The argument concerns a study of 344 patients who suffered cardiac arrest, 18 percent of whom reported having a near-death experience (NDE) during that time. Although the passage is written almost entirely in Ingram's words, since he is reporting someone else's argument we will view that person, van Lommel, as the author of the argument in question. (This assumption could be challenged if evidence were produced to suggest that the reporting is inaccurate, i.e., that Ingram has constructed a straw man.)

- (X) (1) Cardiac arrest is particularly interesting, because (2) for some period of time the brain is flatlined – (2) the electroencephalograph, the EEG, registers no measurable brain activity. (3) That in itself isn't remarkable. (4) Nor are reports of NDEs. But (5) put them together and you have something very intriguing. It appears as if (6) the memories of NDEs come from exactly the time when the brain is inactive. As the lead researcher, Dr. Pim van Lommel, said on *@discovery.ca*, "The only thing we could conclude is that (7) there is consciousness during a flat EEG."

Proposition (6) is clearly a key premise, leading to the conclusion (7). (6), however, needs to be revised in two ways. First, it must be expanded to include reference to the phenomenon of cardiac arrest mentioned earlier. Second, the reference to an inactive brain is too strong, as, read literally, it goes beyond the evidence, cited earlier, which is restricted to the absence of measurable brain activity. With some minor editing, we could arrive at the following economical statement of the argument.

- (Y) 6. The memories of NDEs come from exactly the time during cardiac arrest when there is a flat EEG, i.e., no measurable brain activity.

7. There is consciousness during a flat EEG.

On this reading of (X), (1)–(5) are eliminated as noise, although we've incorporated information from (1), (2), and (5) in arriving at an appropriate formulation of proposition (6).

(6) presupposes a distinct proposition to the effect that there is a period of time during cardiac arrest when there is no measurable brain activity. This presupposition, conveyed by (2) of (X), may puzzle audience members, since the brain and the heart are separate, albeit intimately related organs. We therefore have the option of constructing a slightly more robust canonical form that is more sensitive to potential audience concerns. The propositional content of the argument can also be further clarified through the exercise of some artistic license – specifically, through the introduction of a technical term not employed by the author.

- (Z)
- a. Omega-time is the period of time during cardiac arrest when there is a flat EEG, i.e., no measurable brain activity.
 2. There is frequently a period of omega-time during a cardiac arrest.
 6. The memories of NDEs frequently come from omega-time.

7. There is consciousness during a flat EEG.

(a) defines the notion of omega-time, and (2) makes an empirical claim about occurrences of omega-time. Propositions (2) and (6) of (X) make imprecise claims about how often the brain is flatlined during cardiac arrest, and how often memories of NDEs are associated with periods of omega-time. Insofar as van Lommel fails to qualify these remarks in any way, there is some reason to attribute to him the strong quantificational claims that there is a period of omega-time during every cardiac arrest, and that the reported memories of NDEs always come from this time. However, since the argument for (7) doesn't require these strong (and possibly more controversial) readings, it's more charitable to opt for the weaker quantificational claims (2) and (6) which appear within (Z). And on the weaker readings, (2) and (6) still provide relevant information about the conditions under which this study's data was collected, and which may therefore have some bearing on the plausibility of van Lommel's conclusion. (Imagine, by way of contrast, that only a very small percentage of those who suffered cardiac arrest ever displayed a

flat EEG, and that only a very small percentage of those individuals claimed to have memories which could be traced to a period of omega-time. These facts might plausibly raise suspicions about the reliability of the evidence procured within these very few anomalous cases.)

It is likely, therefore, that neither (Y) nor (Z) distorts the content of the argument that van Lommel understands himself to be presenting in (X). That is, it's reasonable to suppose that, although they are expressed in different terms, each would be endorsed by van Lommel as a fair and accurate representation of the macrostructure of his own argument, were he to read and understand them. We are free, therefore, to work with either canonical form, and may have any number of reasons, extraneous to our principal concern with descriptive accuracy, to prefer one over the other.

The simpler form (Y), for example, may serve our purposes well enough if there is no reason to isolate the (perhaps unobjectionable) presupposition of its sole premise. It may be preferable to work with (Z), however, if there is reason to suspect that this presupposition might be challenged, or if there is reason to highlight the specific quantificational readings of (2) and (6) articulated within that form. In general, therefore, we'll allow for the construction of canonical forms to be guided by the concerns of audience members, and others involved in the evaluation of the argument at hand.

EXERCISES

- 1.47 Define the following terms, each of which occurs in Chapter 1: teleological, syntactic, semantic, pragmatic, abstract object, ordered pair, inference, imperative, optative, declarative, natural language, formal language, indicator word, rhetorical force, ambiguity, vagueness, enthymeme, conditional, antecedent, consequent, hermeneutical, indexical, epistemological, quantificational, straw man, begging the question.
- 1.48 Construct an argument, based on charitable considerations, in favor of some weaker quantificational reading of either premise (2) or premise (6) within (Z). That is, describe a set of conditions under which charity would dictate such an interpretation. Justify your answer.

- 1.49 On the assumption that each of the following passages expresses at least one argument, construct a fair and accurate canonical representation of the argument(s) expressed in each passage. Identify any static or noise. Identify and justify any applications of the principle of charity.
- (a) “And no one would choose . . . to get enjoyment by doing some most disgraceful deed, though he were never to feel any pain in consequence. And there are many things we should be keen about even if they brought no pleasure. . . . It seems clear, then, that neither is pleasure the good nor is all pleasure desirable.” – Aristotle, *Nicomachean Ethics*
 - (b) “The categorical imperative alone can be taken as a practical *law*, while all the others may be called principles of the will but not laws. This is because what is necessary merely for the attainment of an arbitrary purpose can be regarded as itself contingent, and we get rid of the precept once we give up the purpose, whereas the unconditional command leaves the will no freedom to choose the opposite. Thus it alone implies the necessity which we require of a law.” – Immanuel Kant, *Foundations of the Metaphysics of Morals*
 - (c) “Such proposals as Hume’s and Price’s are neither true nor false, though they may be acceptable or unacceptable. Furthermore, because they are neither true nor false, because they are pieces of advice rather than pieces of information, they are not, in any straightforward sense, matters of belief.” – Paul Helm, *Belief Policies*
 - (d) Passage (S) of section 1.5.
 - (e) “When we are confronted with an argument, or what appears to be an argument, we should not be in too much of a hurry to say that it is good or that it is fallacious. Before we can tell whether it *makes* its point, we must be sure we *get* the point.” – Monroe Beardsley, *Practical Logic*
 - (f) “One of the major issues facing argumentation theorists concerns the range of human communicative interactions that will be covered by the term ‘argument.’ If the definition agreed upon is too narrow, then we remain mired in technical studies lacking practical utility to acting individuals. If the term is too broad, then, potentially, every

human action becomes an argument, and Argumentation Theory disappears, swallowed whole by the social sciences.” – Michael Gilbert, *Coalescent Argumentation*

- (g) “Don’t get discouraged if you can’t run out right now, buy a newspaper, and diagram the day’s editorial. Accurate diagramming takes practice and perseverance. It is, in fact, nothing less than mind reading – that is, figuring out the structure of another person’s thought. Of course, nothing psychic is involved. We simply use the evidence present on a printed page or in the spoken word to infer what someone had in mind. But it is not a simple mechanical process either. It requires creativity and intelligence.” – Eric Nolt, *Informal Logic: Possible Worlds and Imagination*
- (h) “While we read a novel, we are insane – bonkers. We believe in the existence of people who aren’t there, we hear their voices, we watch the battle of Borodino with them, we may even become Napoleon. Sanity returns (in most cases) when the book is closed. Is it any wonder that no truly respectable society has ever trusted its artists?” – Ursula K. Le Guin
- (i) “But it is not only in literature that fiction generates immorality. It does it also in life itself. For the substance of our life is almost exclusively composed of fiction. We fictionalize our future; and, unless we are heroically devoted to truth, we fictionalize our past, refashioning it to our taste. We do not study other people; we invent what they are thinking, saying, and doing.” – Simone Weil, “Morality and Literature”
- (j) “The Witch came near and grabbed the girl by the wrist. ‘Why do you want to murder me,’ she said. ‘Can you really believe the Wizard will do as he says? He doesn’t know what truth means, so he does not even know how he lies! And I did not *kidnap* you, you fool! You came here of your own accord, to murder me!’” – Gregory Macquire, *Wicked: The Life and Times of the Wicked Witch of the West*
- (k) “‘Forget the details,’ said the Witch tartly. ‘I just mean, Glinda, is it possible we could be living our entire adult lives under someone’s spell? . . . My skin colour’s been a curse, my missionary parents made me sober and intense, my school days brought me up against political crimes against

Animals, my love life imploded and my lover died.” – Gregory Macquire, *Wicked: The Life and Times of the Wicked Witch of the West*

- (l) “ ‘I know you don’t [like surprises],’ I told him. ‘But you’ll get a kick out of this one, Joe. You’d never guess it in a thousand years.’ Then I went into the kitchen so he could really get started on the bottle I’d bought him at the greenfront. I wanted him to enjoy it – I really did. After all, it was the last liquor he was ever gonna drink. He wouldn’t need A.A. to keep him off the sauce, either. Not where he was goin.” – Stephen King, *Dolores Claiborne*
- (m) “By reason could I have arrived at knowing that I must love my neighbour and not oppress him? I was told that in my childhood, and I believed it gladly, for they told me what was already in my soul. But who discovered it? Not reason. Reason discovered the struggle for existence, and the law that requires us to oppress all who hinder the satisfaction of our desires. That is the declaration of reason. But loving one’s neighbour, reason could never discover, because it’s unreasonable.” – Leo Tolstoy, *Anna Karenina*
- (n) “Perhaps the greatest, most widespread interest in any of Leonardo’s works is that which everywhere and at all times has been concentrated on the *Gioconda*’s [*Mona Lisa*’s] smile. Actually, other characters of Leonardo have the same smile – subtle and ironic, lips pressed together – as the protagonist of this famous canvas in Paris. The figures of the Virgin and St. Anne in the cartoon and in the panel of the same title, for example, have it; and so does the *Leda*, which does not survive in the Master’s version, though its derivative version shows an indisputable fidelity to Leonardo’s model; and there is the mysterious, chiaroscuro *Baptist*.” – Bruno Santi, *Leonardo da Vinci*
- (o) “If men have been the masters of logic, women may be the masters of reading. It is a skill we have perfected. We have listened and read to survive, we have read to predict the maneuvers of those in power over us, to seduce those who might help us, to pacify bullies, to care for children, to nurse

the sick and wounded. We have read what men said, studied their words, heard the ambivalence and confusion in what they say no matter how univocal and logical, and having heard it we have sometimes wanted to cure it, if only by listening, and then listening more and not stopping listening until all is revealed, the final weakness, the final confession of need and weakness that is the sign of our common humanity.” – Andrea Nye, *Words of Power: A Feminist Reading of the History of Logic*

- (p) “‘Mankind has grown too noisy and commercial; there is little spiritual peace,’ one secluded thinker has complained. ‘So be it; but the rumble of the waggons that bring bread to starving humanity is better, maybe, than spiritual peace,’ another thinker, who is always moving among his fellows, answers him triumphantly, and walks away from him conceitedly. But, vile as I am, I don’t believe in the waggons that bring bread to humanity. For the waggons that bring bread to humanity, without any moral basis for conduct, may coldly exclude a considerable part of humanity from enjoying what is brought.” – Fyodor Dostoevsky, *The Idiot*
- (q) “God governs the world; the actual working of his government – the carrying out of his plan – is the History of the World. This plan philosophy strives to comprehend; for only that which has been developed as the result of it, possesses *bona fide* reality. That which does not accord with it, is negative, worthless existence. Before the pure light of this divine Idea – which is no mere Ideal – the phantom of a world whose events are an incoherent concourse of fortuitous circumstances, utterly vanishes.” – G. W. F. Hegel, *The Philosophy of History*
- (r) “History has no mercy. There are no laws in it against suffering and cruelty, no internal balance that restores a people much sinned against to their rightful place in the world. Cyclical views of history have always seemed to me flawed for that reason, as if the turning of the screw means that present evil can later be transformed into good. Nonsense. Turning the screw of suffering means more suffering, and

not a path to salvation.” – Edward Said, “The Screw Turns, Again”

(s) “Live simply, that others may simply live.” – Anonymous

- 1.50 Locate an interesting, recently published argumentative text and repeat exercise 1.49 employing that passage. Be sure to identify the source of your text.

Cogency

2.1 The Four Cogency Conditions

In offering an argument, an author aims to achieve rational persuasion. A cogent argument, we'll say, is an argument by which you ought to be persuaded. More precisely, an argument *A* is *cogent* for some person *P*, within some context *C*, just in case it is rational for *P*, within *C*, to be persuaded to believe the conclusion of *A*, on the basis of the evidence cited within *A*'s premises. An argument is *non-cogent*, for a particular person within a particular context, just in case it is not cogent, within that context, for that person, i.e., just in case that person should not be persuaded by the argument in question. In this chapter, we'll discuss four conditions that are individually necessary and jointly sufficient for argument cogency. This discussion will also allow us later, in Chapter 3, to clarify the notion of argument strength that we employed at an intuitive level throughout Chapter 1.

The four components of argument cogency are designed to delineate the conditions under which it is rational for someone to adopt a new belief, within an argumentative setting. Cogency is a person-relative property of arguments, since whether it's rational for someone to adopt a belief, on the basis of certain evidence, will often depend upon what else that person already rationally believes, and sometimes (perhaps less obviously) upon other features of her subjective standpoint. We'll use the term "epistemic state" to refer to a person's (huge and loosely defined) set of current beliefs, desires, emotions, hopes,

and intentions, which, at any given time, captures how that person views the world and sees herself as situated within her environment. Your epistemic state includes everything about your personal point of view to which you have psychological access and that you may in principle bring to bear upon your interpretation and evaluation of a particular argument within a specific context. By defining the notion of an epistemic state broadly so as to include a large assortment of psychological states, including but not limited to beliefs, we allow for the possibility that any of these psychological states could in principle play a role in the formation of rational belief. Therefore, disagreements as to whether, say, feelings of fear or compassion can ever constitute evidence in support of a conclusion, can be understood as disagreements *within* the confines of this general model. Clearly, a person's epistemic state can change over time, and often as a result of engaging in the practice of argumentation.

The epistemic states of arguers are important features of any argumentative exchange, but, as will be explained later, there can be argumentatively relevant contextual features that are not properties of epistemic states. In order to assess whether someone's belief is rational, for example, we may need to appeal to features of the argumentative context that are not themselves dependent upon that person's beliefs or desires. Strictly speaking, then, cogency is a property of ordered triples $\langle A, P, C \rangle$; where A is an argument; P is some person (who may but need not be either the author of A or among the audience members to whom the author of A has directed her argument) in some particular epistemic state; and C is the context within which, relative to her epistemic state at that time, P interprets and evaluates A . An argument that is cogent for one person in a particular epistemic state may fail to be cogent for another person in a different epistemic state, or for that same person should either their epistemic state or the broader argumentative context shift in some relevant fashion.

Typically, whatever we believe, we believe to be true. And we engage in the practice of argumentation because we're interested in acquiring true beliefs and avoiding false ones. Therefore, in order for it to be *rational* for someone to adopt a new belief within an argumentative setting, that belief must be acquired under conditions that would justify them in having confidence that the belief is true. This simple constraint motivates the first three of the four principal features of the following

account of cogency. We'll say that an argument *A* is *cogent* for you just in case, relative to your epistemic state and the broader argumentative context, it is rational for you to believe that:

- (i) each proposition within *A*'s premise set *S* is true – the T condition;
- (ii) *S* is relevant to *A*'s conclusion – the R condition;
- (iii) *S* grounds *A*'s conclusion – the G condition; and
- (iv) *A* is compact – the C condition.

An argument's *premise set*, of course, includes all and only those propositions which function within that argument as premises.

Since cogency represents one kind of argumentative ideal, and since an argument is an attempt to rationally persuade someone to adopt a certain belief *on the basis of the evidence cited*, our account of cogency is guided by the following intuition. A good argument – an argument by which you ought to be persuaded – offers evidence in such a way that it appeals only to accurate information, that every premise within the argument contains information that plays some essential role in providing evidential support for the argument's conclusion, and that the premises collectively offer enough evidence to justify belief in the argument's conclusion. More precisely, the four TRGC cogency conditions (which you can think of as “The Really Good Conditions,” if you're looking for a mnemonic device) ought to be interpreted as follows.

Clause (i) states the most straightforward condition and requires just that it's rational for you to believe, of each premise within the argument, that it is true. The truth values of an argument's premises are typically independent of one another and usually must be ascertained on an individual, case-by-case basis. When this is not the case, however, in assessing whether an argument passes the T condition, one must also ensure that there is no (perceived) logical or empirical incompatibility within the argument's premise set. The T condition requires that it is rational for you to believe that each of the argument's premises are true simultaneously, at the time at which the argument is being appraised for cogency. It must be rational for you to believe that the premises are true together.

Regarding clause (ii), we'll say that a proposition *P* is *relevant* to a proposition *Q* just in case the truth of *P* would provide evidence in

favor of the truth of Q ; and that a set of propositions S is *relevant* to a proposition Q just in case, were the propositions within S all true, together they would provide evidence in favor of the truth of Q . So by “relevance” we mean what other philosophers have called positive, or favorable, propositional relevance. And we’ll say that a proposition P is *irrelevant* to a proposition Q —that is, that the truth of P would *fail* to provide evidence in support of Q —just in case P is not relevant to Q .

In order for a set of premises to be relevant to a conclusion, some premise(s) within that set must play some role, possibly in conjunction with other premises within the set, in providing evidential support for that conclusion. Otherwise, it would not be possible for the set of premises, as a whole, to provide information that counts in favor of the truth of the argument’s conclusion. It is not required, however, that each or indeed any premise be relevant on its own to the argument’s conclusion. Nor is it required that each or indeed any premise within the set be true. Therefore, a set of premises can be relevant to a conclusion while containing nothing but (true or false) propositions that are irrelevant on their own, but relevant, in conjunction with other premises within the set, to that conclusion. And a set of premises can be relevant to a conclusion while containing some (true or false) propositions that are, as we’ll say, *altogether irrelevant* to that conclusion, i.e., irrelevant both on their own as well as when considered in conjunction with the remaining propositions within the argument’s premise set.

Clause (ii) requires that it is rational for you to believe, of an argument’s entire premise set, that that set is relevant to the argument’s conclusion. That is, it requires that it is rational for you to believe that the argument’s entire premise set would provide some evidential support for the argument’s conclusion, on the assumption that each of the premises within that set is true. With respect to the T and R conditions, therefore, it is possible, and in fact common, for a particular argument to pass one of these conditions and yet fail the other, relative to the epistemic state of someone appraising that argument.

With respect to clause (iii), we’ll say that a set of propositions S *grounds* a proposition Q just in case, were the propositions within S all true, together they would provide *enough* evidence in support of Q to justify believing that Q is true. It follows that it’s a necessary (but not a sufficient) condition of a set of premises grounding a conclusion

that that set must be relevant to that conclusion. No set of premises can provide enough evidence to justify belief in a proposition (under certain conditions) unless it provides some evidence that counts in favor of that proposition (under those same conditions). However, it is not necessarily true of a *grounded argument A* – an argument in which the premises ground the conclusion – either that *A* contains all true premises or that every premise within the argument plays some role in providing evidential support for *A*'s conclusion.

The G condition is the most complex of the four cogency conditions, as it contains one normative clause embedded (or nested) within another. An argument *A* passes the third cogency condition for you just in case it's *rational* for you to believe that the premises of *A*, were they all true, together would provide enough evidence in support of *A*'s conclusion to justify a belief in that conclusion. That is, an argument passes the third cogency condition for you just in case it's rational for you to believe that its premise set grounds its conclusion. Although an argument *A*'s premise set may in fact provide enough evidence to justify belief in *A*'s conclusion, you may not (be able to) recognize this. So it can't be true that you ought to be persuaded by *A*, unless it's rational for you to believe that a certain kind of substantial evidential relation obtains between *A*'s premise set and *A*'s conclusion.

Because every set of premises that grounds a conclusion is also relevant to that conclusion, it's true, in a sense to be explained more carefully later, that if it's rational for you to believe that an argument *A* is grounded, then it will almost certainly be rational for you to believe that *A* ipso facto contains a relevant premise set as well. However, it is possible for an argument to pass the R condition and fail the G condition, relative to the epistemic state of someone appraising that argument. It is possible that it's not rational for someone to believe that a premise set provides enough evidence to justify belief in an argument's conclusion, but it is rational for the same person to believe that that set provides information which counts in favor of that conclusion. Whether the argument in question would pass or fail the T condition, for this individual, is of course an independent matter.

Regarding clause (iv), we'll say that an argument *A* is *compact* just in case each proper subset of its premise set *S* provides less evidential support for *A*'s conclusion than does *S* itself. (Recall that a *proper* subset of a set *S* is any subset of *S* other than *S* itself.) And an argument

is *non-compact* just in case it is not compact. It follows, if A is compact, that each premise within S plays some essential role in providing a certain level of evidential support for A 's conclusion, since removing any single premise from S would decrease the particular level of evidential support provided by S for that conclusion. Therefore, the information contained within the premise set of a compact argument is packaged in such an economical or "compact" fashion that no premise contains information that is either altogether irrelevant to the argument's conclusion (because it has no bearing on that conclusion, even when considered in conjunction with other propositions within the premise set) or superfluous to providing a certain level of evidential support for that conclusion (because that information is redundant given the evidence provided by the remaining propositions within the premise set).

It follows that every compact argument contains a premise set that is relevant to that argument's conclusion. For suppose that A is a compact argument with premise set S . Then some proper subset of S provides *less* evidential support for A 's conclusion than does S itself. But this would not be possible if S provided *no* support for A 's conclusion. So S must provide *some* evidence in support of that conclusion.

Therefore, if it's rational for you to believe that an argument A is compact, then it will almost certainly be rational for you to believe that A ipso facto contains a relevant premise set as well. However, just as it's possible for a premise set to be relevant to a conclusion without grounding that conclusion, so it's possible for a premise set to be relevant to the conclusion of a non-compact argument. Suppose that an argument A 's premise set S is relevant to A 's conclusion. Then S provides some evidential support for that conclusion. But S may contain premises that are altogether irrelevant to that conclusion and, if so, the argument will fail to be compact, even if S also grounds the conclusion in question.

In other words, a premise set is relevant to a conclusion just in case it provides evidence in support of that conclusion; it grounds a conclusion just in case it provides enough evidence to justify belief in that conclusion; and it belongs to a compact argument just in case it contains no information that is either altogether irrelevant or redundant from an evidential standpoint. Roughly, a grounded argument provides enough evidence for a certain purpose, while a compact

argument refrains from offering too much information. So it's easy to imagine how it could be possible, relative to the epistemic state of some appraiser, for an argument to pass the R and G conditions and yet fail the C condition; or for an argument to pass the C condition and fail the G condition; or for an argument to pass the R condition and fail the G and C conditions; or for an argument to fail all three conditions. Whether the arguments in question would pass or fail the T condition, for this individual, is once again an independent matter.

In summary, then, an argument is cogent for you just in case it passes all four cogency conditions, i.e. just in case it's rational for you to believe that each of the argument's premises are true, that the argument's premise set is relevant to the argument's conclusion, that each premise plays an essential role in providing evidential support for the argument's conclusion, and that together the premises provide enough evidence in support of the conclusion to justify believing that the conclusion is true. An argument is *non-cogent* for you just in case it's not cogent for you, i.e., just in case it's not rational for you to believe, of even just one of these conditions, that that condition obtains.

Notice that judgments of non-cogency do *not* require that it's rational for you to believe that a particular cogency clause fails to obtain, i.e., that it's rational for you to *disbelieve* that that clause obtains. So it's a sufficient but not a necessary condition of an argument failing the T condition, for example, that it's rational for you to believe that at least one of the propositions within the argument's premise set is false. This condition is not necessary, since that argument would also fail the T condition for you were it rational for you merely to suspend judgment as to the truth value of some proposition within the argument's premise set. Such a rational suspension of judgment would be enough to guarantee that it's not rational for you to believe that each of the argument's premises is true.

In evaluating arguments, philosophers have tended to concentrate on two particularly interesting evidential relations that may obtain between the set of premises and the conclusion of an argument – validity and reliability. An argument is *valid* just in case it is not logically possible for its conclusion to be false while all of its premises are true. That is, the truth of the argument's premises logically guarantees the truth of its conclusion. So valid arguments are “truth preserving” in

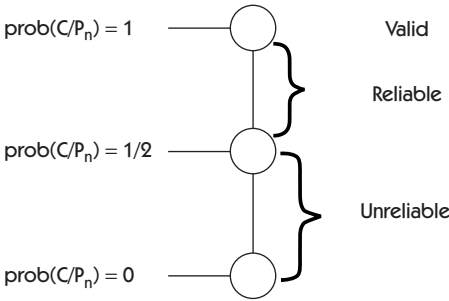


Figure 2. Types of Logical Support. Where “ $\text{prob}(C/P_n) = m$ ” is read as “the conditional probability that the argument’s conclusion C is true, given that each of the argument’s n premises is true, is m .”

the sense that a valid inference will never lead us from a set of all true premises to a false conclusion. In still other words, at least one of the premises of a valid argument must be false whenever its conclusion is false. Of course, valid arguments may in fact have at least one false premise and a false conclusion, or at least one false premise and a true conclusion, or all true premises and a true conclusion. But, by definition, a valid argument cannot have all true premises and a false conclusion.

An argument is *invalid* just in the case it is not valid. And an argument is *sound* just in case it both is valid and has all true premises, and *unsound* just in case it is not sound. So an unsound argument either is not valid (in which case it is either reliable or unreliable) or does not have all true premises.

An argument is *reliable* just in case both (a) it is not valid and (b) its conclusion is more likely to be true than false, given that each of its premises is true. According to clause (b), that is, the probability that the conclusion is true, on the condition that each of the argument’s premises is true, is greater than half. In other words, the conclusion is true in most of the situations in which all of the premises are true. Any combination of truth values is possible among the constituents of a reliable argument. True premises, most notably, may reliably support a false conclusion.

An argument is *unreliable* just in case it is neither valid nor reliable. And an argument is *trustworthy* just in case it both is reliable and has all true premises, and *untrustworthy* just in case it is not trustworthy. So

an untrustworthy argument either is not reliable (in which case it is either valid or unreliable) or does not have all true premises.

Reliability is a property that admits of degrees. Within the class of reliable arguments, argument *A* is *more reliable* than argument *A'* just in case the probability that the conclusion of *A* is true (given that each proposition within the premise set of *A* is true) is greater than the probability that the conclusion of *A'* is true (given that each proposition within the premise set of *A'* is true). Validity, on the other hand, does not admit of degrees. It doesn't make sense to say that one argument is "more valid" than another.

In this text, we'll treat cogency as being, like validity, a property of arguments that does not admit of degrees. We'll explain in Chapter 3 how it is possible for one cogent argument to be stronger than another cogent argument. But it doesn't make sense to say, of two arguments, that one is "more cogent" than the other.

Since we are interested in acquiring true beliefs through an argumentative process, cogent arguments are of interest to us because it is always rational for you to believe, of an argument that you rationally believe to be cogent, that its conclusion is true. However, for reasons that will be explored later, rationally believing that an argument is either valid or reliable gives one no reason to believe that the argument is cogent, and no reason to believe that its conclusion is true. Soundness and trustworthiness, therefore, have a more direct bearing on our concern with truth and cogency. Rationally believing that an argument is sound gives one conclusive reason to believe that its conclusion is true (without guaranteeing that the argument is cogent). While, subject to certain contextual qualifications, rationally believing that an argument is both compact and trustworthy gives one conclusive reason to believe that the argument is cogent (without guaranteeing that its conclusion is true).

None of this, of course, implies that validity and reliability are unimportant properties. On the contrary, soundness is defined partially in terms of validity; trustworthiness is defined partially in terms of reliability; and both validity and reliability have traditionally been proposed as grounding relations, i.e., relations that, should they obtain, would justify belief in an argument's conclusion, on the assumption that the argument's premises are true. We'll explore these and other philosophically interesting questions later, after we have worked

through a series of argumentative examples designed to motivate the conception of cogency articulated here and to illustrate its practical application.

EXERCISES

- 2.1 Is it possible to believe a proposition without believing it to be true? Justify your answer.
- 2.2 List five propositions that it is rational for you to believe, five propositions it is rational for you to disbelieve, and five propositions it is neither rational for you to believe nor rational for you to disbelieve. Justify your answer.
- 2.3 Suppose that argument *A* contains a contradictory proposition as its sole premise. Is it possible for *A* to pass the T condition for some individual? Justify your answer.
- 2.4 Suppose that argument *A* contains two or more propositions, within its premise set, that are inconsistent with one another. Is it possible for *A* to pass the T condition for some individual? Justify your answer.
- 2.5 Construct a two-premise argument that passes the R and G conditions for you, in which each premise is relevant, on its own, to the argument's conclusion. Justify your answer.
- 2.6 Construct a two-premise argument that passes the R and G conditions for you, in which each premise is irrelevant, on its own, to the argument's conclusion. Justify your answer.
- 2.7 Construct a two-premise argument that passes the R but fails the G condition for you, in which each premise is true and relevant, on its own, to the argument's conclusion. Justify your answer.
- 2.8 Construct a two-premise argument that passes the R but fails the G condition for you, in which each premise is false and relevant, on its own, to the argument's conclusion. Justify your answer.
- 2.9 Construct a two-premise argument that passes the R but fails the G condition for you, in which each premise is true and irrelevant, on its own, to the argument's conclusion. Justify your answer.
- 2.10 Construct a two-premise argument that passes the R but fails the G condition for you, in which each premise is false and irrelevant, on its own, to the argument's conclusion. Justify your answer.

- 2.11 Of the arguments that you constructed in response to exercises 2.5–2.10, which, if any, are compact?
- 2.12 Construct a two-premise argument that passes the G but fails the C condition for you. Justify your answer.
- 2.13 Construct a two-premise argument that passes the R but fails both the G and C conditions for you. Justify your answer.
- 2.14 Could it be rational for you to believe that a certain argument is grounded for somebody else, but not rational for you to believe that the same argument is grounded for you? If so, illustrate your answer with an example. If not, explain why not.
- 2.15 Construct (a) a two-premise valid argument about your hometown with at least one false premise and a false conclusion, (b) a three-premise valid argument about your hometown with at least one false premise and a true conclusion, and (c) a four-premise valid argument about your hometown with all true premises and a true conclusion.
- 2.16 Construct (a) a two-premise reliable argument about your hometown with at least one false premise and a false conclusion, (b) a three-premise reliable argument about your hometown with at least one false premise and a true conclusion, (c) a four-premise reliable argument about your hometown with all true premises and a true conclusion, and (d) a two-premise reliable argument about your hometown with all true premises and a false conclusion.
- 2.17 Repeat exercises 2.15 and 2.16, employing only single-premise arguments in each case.
- 2.18 Each of the following entries identifies a type of argument. In each case, if this type of argument is possible, construct a two-premise example; if this type of argument is not possible, explain why not. (Hint: Exactly seven cases are not possible.)
 - (a) a valid, sound argument
 - (b) a valid, unsound argument
 - (c) a valid, reliable argument
 - (d) a valid, unreliable argument
 - (e) a valid, trustworthy argument
 - (f) a valid, untrustworthy argument
 - (g) an invalid, sound argument
 - (h) an invalid, unsound argument

- (i) an invalid, reliable argument
 - (j) an invalid, unreliable argument
 - (k) an invalid, trustworthy argument
 - (l) an invalid, untrustworthy argument
 - (m) a reliable, sound argument
 - (n) a reliable, unsound argument
 - (o) a reliable, trustworthy argument
 - (p) a reliable, untrustworthy argument
 - (q) an unreliable, sound argument
 - (r) an unreliable, unsound argument
 - (s) an unreliable, trustworthy argument
 - (t) an unreliable, untrustworthy argument
- 2.19 Explain why our definition of a compact argument makes reference to the *proper* subsets of an argument's premise set.
- 2.20 Suppose that argument *A* contains a premise set that is irrelevant to *A*'s conclusion. Prove that *A* is non-compact.
- 2.21 Explain why it's rational for you to believe that the conclusion, of any argument that you rationally believe to be cogent for you, is true.
- 2.22 Suppose that it's rational for you to believe, of an argument *A*, that *A* fails only the C condition for you. Is it rational for you to believe that *A*'s conclusion is true? Justify your answer.

2.2 Rational Belief

Suppose you look out the window, perceive that it's snowing, and infer that the temperature outside is below freezing. In all likelihood, for you this constitutes a cogent argument of the following form.

- (A) 1. It's snowing outside.
-
2. The temperature outside is below freezing.

Since you rationally believe that you're not drugged and that your perception of the snowflakes is occurring under normal lighting conditions during daytime, it's rational for you to believe that your perception is veridical, and that the argument's sole premise is true. Furthermore, given what you rationally believe about weather systems in your area, the physical constitution of snow, and the freezing point

of water, it's also rational for you to believe that this premise is not merely relevant to, but that it also grounds, the argument's conclusion. On the assumption that it's snowing outside, it's (far) more likely to be true than false, though it's not logically guaranteed, that the temperature outside is below freezing. So it's rational for you to view (A) as a reliable argument, with its sole premise providing you with enough evidence to justify belief in (2). That is, it's rational for you to believe that (1) grounds the conclusion of this compact argument. Since, as was established earlier, it's also rational for you to believe that it's snowing outside, it's rational for you to view (A) as a trustworthy argument. It follows that it's rational for you to be persuaded to believe that the temperature outside is below freezing, on the basis of the evidence cited. That is, for you, the argument is cogent.

Cogency is a normative concept, defined in terms of rational belief, and this simple example illustrates the central role played by an individual's total epistemic state in assessing the cogency of any particular argument. It would not be possible, for example, to form a rational belief in the (non-self-evident) proposition that it's snowing outside, in the absence of further rational beliefs about how that belief was formed. Someone might believe that it's snowing outside, but they might discover, on reflection, that they are unable to say anything by way of justifying that belief. (Perhaps they've been hypnotized.) Or someone might believe that it's snowing outside while simultaneously believing that they have been drugged and are hallucinating snowflakes. (Perhaps the hallucinations are so powerful that they irresistibly induce belief, despite the cognitive dissonance involved.) The respective epistemic states of these individuals reveal that their belief that it's snowing outside is, in each case, not a rational belief, in the sense that they have no reason to be confident that their belief is true.

Therefore, in order for you to be justified in having confidence that an argument's conclusion is true, it must be rational for you to believe that the argument's premises are true. Mere belief is not enough. And when this rationality condition obtains, it does so in virtue of certain features of your broader epistemic state.

Similar points can be made, *mutatis mutandis*, with respect to the remaining cogency conditions as well. Someone who lacks the requisite background beliefs referred to above, about the weather, for example, probably is not in a position to form a rational belief to the

effect that the presence of snow constitutes evidence of below-freezing temperatures. And since beliefs can arise in any number of ways, the mere possession of a belief in the existence of such an evidential relation provides only weak evidence, by itself, that, in (A), (1) is in fact relevant to (2).

Since our discussions of cogency will be framed in terms of rational belief, it's important that we employ a notion of rational belief that is sensitive to the actual dynamics of rational belief formation, and that does not impose unrealistic cognitive demands upon authors or audience members. Arguers typically operate under more or less severe epistemic constraints. While investigating a particular topic, it is rare to have access to all the evidence pertaining to that topic, and not uncommon for individuals to misinterpret some of the evidence to which they do have access. Often, through no fault of our own, we argue from either ignorance or false belief. Our concept of cogency is designed specifically to serve the *practical* purpose of guiding arguers *themselves* (i.e., both authors and audience members) through the process of interpersonal rational persuasion, from the vantage point of the particular epistemic state within which they happen to be situated at any given time (and, derivatively, to allow others to evaluate their reasoning from that same internal perspective). Therefore, in deciding whether someone would be justified, on a particular occasion, in having confidence that a certain belief is true, we will restrict our attention to that person's epistemic state at that time; and, most significantly, to her current beliefs about the nature and scope of the evidence before her.

In our treatment of rational belief, we want to strike a middle path between two extremes. On the one hand, we want to avoid imposing stringent external standards for rational belief that are not sensitive in any way to the epistemic states of arguers. For example, while, in an important sense, sound and trustworthy arguments obviously represent one kind of argumentative ideal, it is not practically helpful simply to instruct arguers that they ought to be persuaded by sound or trustworthy arguments. What matters in argumentation are our beliefs about the arguments in question. Even if an argument is sound or trustworthy, it may *not* be rational for you to be persuaded by it, if you fail to recognize that it possesses these properties. For example, you may have no reason to believe that its premises are true.

At the same time, mere belief is never enough to underpin cogency. We often believe propositions in an epistemically irresponsible fashion, in the sense that we often hold a belief to be true in some situation even though, *relative to our own epistemic state*, we are not entitled, in that situation, to have confidence in the truth of that belief. Sometimes we believe propositions even when we have the resources necessary to appreciate that these beliefs would not withstand critical scrutiny, and so ought to be revised. Sometimes, for example, we believe propositions because we're too lazy to assess the evidence against them, or because we don't want to acknowledge the existence of evidence against them, or simply because we wish that they were true. Therefore, while recognizing the crucial significance of epistemic states within the argumentative process, we don't want to be *so* accommodating to an arguer's personal subjectivity that we remove the conceptual possibility of her arguing (and believing propositions) in an epistemically irresponsible fashion. In particular, we don't want to endorse a view that says that an argument is cogent for someone merely because they are persuaded by it; or merely because, for example, they believe that the argument is sound when, relative to their own epistemic state, they are at fault and ought to know better.

Therefore, we need to settle upon some understanding of a rational belief as a belief that can withstand some process of critical review, where that process is appropriately sensitive to the individual believer's actual epistemic state, and where the outcome of that process can be understood by the individual believer to have normative force regarding her own epistemic behavior. That is, we need a test that will motivate believers to uphold (what are deemed to be) rational beliefs and abandon (what are deemed to be) non-rational beliefs. The test should speak to each of us, mired within our own idiosyncratic, sketchy, and persistently fallible worldview.

2.3 Reflective Stability

The solution we will adopt is heavily indebted to a theory of rational belief called subjective foundationalism, which was developed with great care and ingenuity by Richard Foley in his 1987 study *The Theory of Epistemic Rationality*. We'll say that it's *rational* for a person *P* to believe a proposition *Q* just in case, were *P* to reflect carefully upon *Q* in the

context of her current overall epistemic state, she would eventually (either come to or continue to) form a settled conviction that *Q* is true. That is, after carefully reviewing the available evidence for and against *Q*, along with the available evidence for and against any of her other beliefs that she judges, on reflection, to be germane to her assessment of *Q*'s truth value, then, relative to her own epistemic standards, *P* would endorse *Q* as a true proposition, rather than judging *Q* false, or suspending judgment as to *Q*'s truth value.

Rational beliefs are therefore, in Foley's words, *reflectively stable*. If a belief in a proposition is rational for someone, then that person would eventually endorse that proposition after a process of due, or ideal, deliberation. In other words, an individual's belief is reflectively stable if no further reflection, beyond a certain point of endorsement, undermines that individual's confidence that the belief is true. If no such stability can be achieved – if, for example, she continues indefinitely to vacillate between endorsing *Q* and rejecting *Q* – then it is not rational for the individual in question to uphold this belief.

In defining rational belief in this manner, we are relying ultimately upon the deliberative judgment of the individual believer herself. At the end of the day, it is *P*'s (possible) endorsement of *Q* and no one else's, that determines whether it's rational for *P* to believe *Q*. Furthermore, there are no external standards placed upon the process of ideal deliberation. How long and how rigorously *P* ought to reflect upon *Q* will depend only upon what is required in order for *P* to reach a point of reflective stability with respect to *Q*. Finally, all of *P*'s judgments are made relative to her own epistemic state, which includes, crucially, her own epistemic standards relating to rational belief formation, i.e., her own judgments as to what constitutes evidence in any particular case, as well as how much evidence is required to justify one in having confidence in the truth of a proposition. So *P*'s epistemic state includes whatever beliefs she may hold about either relevance or grounding relations, for example.

It is easy to see how this approach to rational belief avoids the problem of imposing alien standards and unrealistic cognitive demands upon arguers. It is perhaps more difficult to appreciate its normative thrust, i.e., to see how it offers the possibility of a serious, genuine critique of the status quo. If individuals are required to review their beliefs critically only in light of their other beliefs and their own

epistemic standards, how enlightening could this process possibly be? How much difference can there be, on this analysis, between belief and rational belief?

Notice that in determining whether Q is reflectively stable for P , we are required to make an empirical, counterfactual judgment: a judgment about P 's actual epistemic behavior under certain ideal conditions. It will frequently be no trivial matter to arrive confidently at any such judgment. Often, therefore, it will be far from obvious – either to us or to P herself – whether it is rational for P to believe Q . Notice also that this test works for any proposition whatsoever and can be applied to propositions that P either straightforwardly believes; or straightforwardly doesn't believe; or believes but doesn't believe that she believes; or doesn't really believe even though she believes that she does believe them. So P can be in for any number of surprises. In principle, she can learn through this test that it's rational for her to believe something she already believes; that it's rational for her to believe something that she doesn't realize she already believes; that it's rational for her to believe something she doesn't already believe; that it's not rational for her to believe something she currently believes; and that it's not rational for her to believe something that she believes it is rational for her to believe. There are other possibilities of course. But each of these scenarios could result in a significant alteration of P 's epistemic state.

Therefore, given the scope of this test and the empirical nature of judgments of reflective stability, it's just not possible to say *a priori* how much of a normative challenge such a critical review will present to anyone's epistemic state. We simply cannot say without carrying out the exercise. And given the complexity of these hypothetical judgments, we should expect that there will be cases of rational disagreement between individuals over whether it's rational for P to believe Q . We should also expect that we often won't have access to enough information to enable us to arrive at a confident judgment about these matters.

What we *can* say *a priori* is that, other things being equal, someone's current beliefs are more likely to be rational to the extent that they are carefully reflective about what they believe, and to the extent that they generally follow strategies of belief formation the products of which would likely withstand (their own internal) critical scrutiny. Therefore,

the gap between belief and rational belief, on this account, will vary from individual to individual, depending upon their epistemic habits. If someone typically forms beliefs in a hasty fashion, showing little concern for evidential considerations, and if she rarely subjects her beliefs to any kind of critical evaluation, then it's likely that, whether she realizes it or not, her feelings of confidence in the truth of her beliefs will often be unwarranted. It's also likely that she will fail to believe many propositions the truth of which she ought to be confident about.

On this account, in order for it to be rational for you to believe *Q*, it's not necessary that you believe *Q*. It's convenient, therefore, to have another way of referring specifically to someone's actual beliefs, when it's also rational for that individual to hold those beliefs. Therefore, we'll distinguish between (a) a proposition being what it's *rational for you to believe* and (b) a proposition being what you *rationally believe*. Only in the latter case do you necessarily have a rational belief, i.e., an actual belief which, if appropriately critically reviewed, would pass the reflective stability test. In other words, if you rationally believe something, then you believe it in a certain way. (Just as, if you're softly singing something, then you're singing it in a certain way.) Specifically, you believe it in such a way that it's also rational for you to believe it. On the other hand, if it's (merely) rational for you to believe a proposition *Q*, it does not follow that you actually believe *Q*.

Whether you rationally believe *Q* or whether it's (merely) rational for you to believe *Q*, it's not necessary, in either case, that you have in fact subjected *Q* to the requisite kind of internal critical scrutiny discussed above. Nor, significantly, is it sufficient that you *have* subjected *Q* to critical scrutiny and that you feel confident that *Q* is true. Your critical review may have been flawed. You may have conducted the review under stress, while feeling tired, and you may have committed errors that you would recognize as such upon further reflection. In other words, feeling confident about a proposition *Q*, and even feeling confident that you have reached a point of reflective stability with respect to *Q*, does not guarantee that you have indeed reached that point, and therefore does not guarantee that your belief in *Q* is rational. This cautionary note applies both to extremely meticulous believers and to sloppy or reckless ones. It's possible, of course, to form well-supported, rational beliefs about matters of rational belief.

But all such judgments are inherently fallible. It's possible that many of our most carefully considered beliefs, especially our beliefs about especially difficult matters, are mistaken. And it's often no easy matter to assess the rationality of a particular belief.

This proposal, therefore, does not merely uphold the status quo. It allows us to pass informed and genuinely critical judgments, of both a positive and negative nature, upon an individual's actual beliefs, where those judgments appeal to the results of a review process of ideal deliberation that is structured by internal constraints imposed by that individual's own epistemic state. Roughly, it's rational (not rational) for *P* to believe *Q* just in case that belief would (not) survive or emerge from a careful internal critical review undertaken by *P* herself. And so the judgments that result from this exercise can give *P* herself a reason to alter her epistemic behavior. *P* can appreciate the normative force of these judgments, because they are judgments that she herself would make in a situation relevantly similar (and perhaps identical) to her present circumstances. In conducting an internal review of *Q*, *P* takes on no new information "from the outside." She works solely with the resources already at hand within her epistemic state. What's perhaps different is her level of reflective engagement with this material.

This notion of rational belief is well suited for articulating the cogency conditions. If a belief is rational for someone in this sense, then that person is justified in having confidence that that belief is true. So they're entitled to rely upon it within argumentative (as well as other) settings. If, as an author, you present an argument that is cogent for your audience, and if they ignore or reject that argument, thereby frustrating your goal of rational persuasion, then, extraordinary circumstances aside, it is not your fault. You have behaved in a non-culpable or epistemically responsible fashion, at least with respect to those propositions you have chosen to employ within your argument. You have presented an argument that ought to be compelling for your audience, i.e., an argument that would persuade them, were they to behave rationally.

Similarly, an audience member cannot be faulted, at least with respect to the propositions she believes, for being persuaded by an argument that is cogent for her. If argument *A* is cogent for you, and if you are persuaded by *A* to adopt its conclusion, then it follows that

you believe that *A*'s premises are true, that they ground that conclusion, and so on. It also follows that it's rational for you to believe these propositions in the sense that your beliefs would survive a careful internal critical review. Therefore, in being persuaded by *A*, you have behaved in a non-culpable or epistemically responsible fashion, at least with respect to those propositions that have led you to acquire a new belief.

Our notion of rational belief, therefore, represents a normative standard that may reasonably be imposed upon individuals who are attempting to decide, from their own epistemic vantage point, whether they ought to be persuaded by certain arguments. Each individual arguer has the capacity to determine, on her own, whether she ought to be persuaded by any given argument. In making this assessment, an individual must (merely) carefully scrutinize her beliefs about that argument against the backdrop of any of her most thoughtful, most well-considered judgments that she deems, on reflection, to be germane to an assessment of that argument. In fact, practically speaking, individuals ultimately have nothing else to which they can confidently appeal, in appraising arguments, other than their own reflective judgment. At the same time, this account allows for the fact that individuals can argue in an epistemically responsible fashion without necessarily engaging in extensive or agonizing deliberations over the contents of particular argumentative proposals. Cogent argumentation is often a thoroughly unremarkable, utterly prosaic occurrence within the everyday flow of events. Often we non-culpably propose or adopt conclusions by operating with rational beliefs about which we are in fact relatively unreflective.

At the beginning of the [previous section](#) we claimed that (*A*) is probably a cogent argument for most readers. We are now in a position to more fully substantiate this claim. Let's assume, in order to illustrate certain important points about the nature of belief, that you believe, about (*A*), both that (1) is true and that (1) grounds (2). Your belief that it's snowing outside – (*A*)'s sole premise – is a rational belief provided that, relative to the body of evidence to which you have epistemic access, you are justified in having confidence that your belief is true. For example, you might believe that it's snowing because you believe that you're perceiving snowflakes under normal lighting conditions,

that you're not hallucinating, that you've not been hypnotized, and so on. Were you to carefully reflect upon your belief that it's snowing outside, and to consider why you hold this belief, you would not discover anything that would lead you to suspect that it is not true. On the contrary, you would continue to endorse it as a true belief. Therefore, you can't be faulted for believing that it's snowing outside, or for relying upon that proposition as a premise. This is so regardless of whether it is snowing outside or whether, unbeknownst to you, you're being deceived by an evil demon, or drugged as a practical joke.

Rational believers, therefore, need not be either omniscient or infallible. Nonetheless, humans have a remarkable capacity for rational thought, even in spite of our inability to consciously attend to more than a relatively small body of evidence at any one time. Most adults, for example, arguably have an infinite number of true rational beliefs. It follows that most of our rational beliefs are not occurrent, but dispositional in nature. You probably have many true rational beliefs about the rudimentary facts of weather formation, for example. You probably acquired these beliefs long ago, in long-forgotten contexts, without any longer regularly thinking about them, while maintaining an ongoing cognitive capacity to consciously recall relevant beliefs about the weather, and to justify your confidence in those beliefs, as the need arises. Therefore, your belief that the proposition that it's snowing outside grounds an inference in support of the proposition that the temperature outside is below freezing, can be a rational belief without your having any conscious, occurrent thought to that effect. You can possess this belief in virtue of your disposition to behave (including speak) in certain ways under certain counterfactual conditions; and in virtue of features of your broader epistemic state, you can be justified in having confidence that this belief is true. In other words, your non-occurrent belief that (1) grounds (2) in (A) is a rational belief provided it would survive an appropriate critical review. Of course, the rationality of this belief is not dependent upon your having actually conducted such a review. Similarly, you can believe that it's snowing outside, and it can be rational for you to hold this belief, without having any conscious thoughts about snow, and without consciously recognizing that you possess that belief, or that it's rational for you to do so.

It's possible, therefore, for argument (A), for example, to be cogent for you, and indeed for you to rationally believe that (A) is cogent for you, without you having any conscious, occurrent thoughts to the effect that (A) is cogent for you, or that (A) has a true premise, or that its premise either is relevant to or grounds the conclusion of this compact argument. In other words, an arguer can be rationally persuaded by a cogent argument for a certain period of time – say, over the course of an afternoon – without consciously thinking about (the conditions of) cogency throughout that temporal interval.

It is also important to note that our account of cogency focuses on the propositional macrostructure of arguments, without attempting to capture *every* aspect of non-culpable argumentative behavior. If argument A is cogent for you, then it follows that you ought to be persuaded to adopt the proposition that occurs as A's conclusion, on the basis of the evidence cited within the propositions that occur within A's premise set. And if you are so persuaded, you can't be faulted for being persuaded by *that argument*, i.e., that instrument of rational persuasion which possesses that precise macrostructure. So your behavior is non-culpable with respect to the *propositions* by which you have been persuaded. But your overall engagement with argument A may be culpable on other grounds. You may be at fault for the *manner* by which you have been persuaded.

Our account of rational belief is compatible, for example, with (what's sometimes called) *epistemic luck*. If you've been persuaded to believe the conclusion of an argument A that is cogent for you, then you rationally believe, among other things, that A's premises are true. That is, you believe that they are all true, and that belief as a matter of fact would survive a careful internal review. But it's possible, in spite of this, that some of A's premises concern extremely complex or controversial matters, and that your belief in the truth of those premises is irresponsibly unreflective. It's possible that you haven't thought about these matters as carefully as you should have, and that you're just lucky to find yourself in a position in which (unbeknownst to you) your belief is reflectively stable. What you (luckily) rationally believe, you believe for no (or at least not much) reason. Or, to consider a different scenario, it's possible that you have reflected substantially upon the argument's premises, and that you believe that you have good reasons – and in fact reasons that would survive a critical

review – for believing them to be true. Unfortunately, while your belief in the truth of these premises is reflectively stable, you in fact believe them (unbeknownst to you) for weak and indefensible reasons. That is, while you're lucky that your belief in the truth of these premises would survive a careful internal critical review, your reasons for being confident in that belief are faulty and would not survive such a review. What you (luckily) rationally believe, you believe for the wrong reasons. In either case, however, the *propositions* that serve as the objects of your belief are unassailable, as the objects of rational, reflectively stable belief.

Instances of this kind of epistemic luck may be relatively rare. Nonetheless, they establish that arguers who engage non-culpably – in our “propositional” sense of the term – with cogent arguments may exhibit argumentative behavior that is faulty or irresponsible in certain other non-propositional, or procedural respects. Procedural culpability is certainly worrisome for anyone with the goal of acquiring true beliefs and avoiding false ones. One may not be so lucky next time around, and if you develop a habit of believing propositions on indefensible grounds, you will likely significantly increase your chances of acquiring false beliefs.

It is possible to legislate procedurally culpable rational beliefs out of existence by invoking additional normative criteria. One could argue, for example, that if *P* believes proposition *Q*, then that belief is *rational* just in case (i) *Q* is reflectively stable for *P*, (ii) there is some reason *R* on the basis of which *P* believes *Q*, and (iii) the proposition that “*R* justifies believing *Q*” is also reflectively stable for *P*. A rational belief, in this stronger sense, is a reflectively stable belief, which is believed for reasons that would continue to be regarded as compelling or justificatory at the conclusion of a careful internal review of that belief. Readers who are attracted to this conception of rational belief are invited to explore its implications further. In what follows, however, for simplicity we'll largely ignore this complicating factor and adhere to a strictly propositional reading of rational belief.

Our objective in this section has been to provide individuals with a practical and serviceable standard of cogency to which they (and others) can appeal in evaluating arguments and monitoring their own argumentative behavior. While this standard itself appeals to the outcomes of a (typically hypothetical) process of ideal deliberation, it's

of course not reasonable to demand of arguers that they subject each argumentatively relevant belief to a full-scale internal critical review. Such a demand would seriously impede, and therefore seriously impoverish, the general practice of argumentation (never mind that it would interfere with our other pursuits in life as well). As noted earlier, arguers often unproblematically employ beliefs that are held in a relatively unreflective manner. At the same time, and placing practical constraints aside, individuals are perhaps well advised, as a general rule of thumb, to subject an argumentatively relevant belief to a full-scale (or at least a fairly thorough) internal review whenever they believe they have a reason (or at least a strong reason) to suspect that that belief may not be reflectively stable for them. However, the strict adoption of this rule would also likely significantly alter the argumentative behavior of most individuals. (At the very least, it would significantly reduce the number of arguments an individual would be able to consider within any given time period.) So it's debatable whether this is exactly the right rule that, if followed conscientiously, would best enhance even the narrow epistemic goal of acquiring true beliefs and avoiding false ones. But we won't attempt to resolve this difficult issue here. The answer to the question of just how reflective an arguer should *in fact* be, about those propositions which are argumentatively relevant for her, is likely to be *highly* contextually sensitive in nature.

For our purposes, we'll insist merely that an author or audience member who operates, within a particular argumentative setting, with rational (i.e., reflectively stable) beliefs, behaves in a "propositionally" non-culpable and epistemically responsible fashion within that setting. Whether lucky or not – whether her beliefs are true, whether she believes them for the right reasons, and whether others find her arguments persuasive – there is an important sense in which an arguer who behaves in this manner, operating with propositionally rational beliefs, has done everything that can reasonably be expected of her.

EXERCISES

- 2.23 Explain how it's possible for some person *P* to believe a proposition *Q* without believing that she believes *Q*. Illustrate your answer with an example, stating clearly your evidence for the two claims that *P* believes *Q*, but does not believe that she believes *Q*.

- 2.24 Repeat exercise 2.23 with respect to the possibility of someone *P* believing that she believes *Q*, without really believing *Q*.
- 2.25 Explain how it's possible for someone to believe that it's snowing outside without at the same time having any conscious thoughts about snow. What could constitute evidence for the existence of this belief?
- 2.26 Argue in support of the claim that most adults have an infinite number of true rational beliefs.
- 2.27 Compare your epistemic habits – your habits regarding belief formation – with the epistemic habits of someone you know very well. In general, whose beliefs are more likely to be rational? Why? Illustrate your answer with a recent example.
- 2.28 Identify two propositions you currently believe, but where those beliefs are not likely to be rational, in the sense that you would not likely reach reflective stability with respect to those propositions. Justify your answer.
- 2.29 Identify an argument that you have rationally believed, for at least the last five years, to be cogent for you. Justify your answer. If you cannot identify such an argument, explain why not.
- 2.30 If some argument *A* is not cogent for you, then, relative to your current epistemic state, you would not reach reflective stability with respect to at least one of four propositions. Identify those four propositions.
- 2.31 Describe two situations in which you might fail to rationally believe that the conclusion of an argument, which is cogent for you, is true. Justify your answer.
- 2.32 True or false? Justify each answer.
 - (a) If you believe that argument *A*'s conclusion is true, then you must believe that *A* is cogent for you.
 - (b) If you rationally believe that argument *A*'s conclusion is true, then it must be rational for you to believe that *A* is cogent for you.
 - (c) If you believe that argument *A*'s conclusion is false, then you must believe that *A* is not cogent for you.
 - (d) If you rationally believe that argument *A* is not cogent for you, then it must be rational for you to believe that *A*'s conclusion is false.

- (e) If argument *A* is cogent for you, then you must believe that *A* is cogent for you.
- (f) If argument *A* is cogent for you, then you must rationally believe that *A* is cogent for you.
- (g) If argument *A* is cogent for you, then it must be rational for you to believe that *A* is cogent for you.
- (h) It's possible that argument *A* is cogent for you, though you don't believe that *A*'s premise set grounds *A*'s conclusion.
- (i) It's possible that argument *A* is cogent for you, though you don't rationally believe that *A*'s premise set grounds *A*'s conclusion.
- (j) It's possible that it's rational for you to believe proposition *Q*, although you don't believe *Q*.
- (k) It's possible that you rationally believe proposition *Q*, although you don't believe *Q*.
- (l) It's possible that you rationally believe proposition *Q*, although you have never carefully reflected upon *Q*.
- (m) If you have subjected proposition *Q* to an internal critical review and you feel confident that *Q* is true, then *Q* is true.
- (n) If you have subjected proposition *Q* to an internal critical review and you feel confident that *Q* is true, then it's rational for you to believe that *Q* is true.
- (o) In order for it to be rational for you to believe proposition *Q*, you must have subjected *Q* to an internal critical review.
- (p) If you believe that proposition *Q* is reflectively stable for you, then *Q* is reflectively stable for you.
- (q) If it's rational for you to believe that proposition *Q* is reflectively stable for you, then it's rational for you to believe that *Q* is true.
- (r) If it's rational for you to believe that proposition *Q* is reflectively stable for you, then *Q* is true.
- (s) If proposition *Q* is reflectively stable for person *P*, and *Q* is not reflectively stable for person *P'*, then at least one of *P* or *P'* must be in possession of a false belief.
- (t) If person *P* believes proposition *Q*, and if *Q* is reflectively stable for *P* while not-*Q* is reflectively stable for person *P'*, then at least one of *P* or *P'* must be in possession of a false belief.

- 2.33 Suppose that you rationally believe that proposition P – a proposition that also happens to serve as the conclusion of argument A – is false. Describe one scenario within which it would be rational for you to believe that A is not cogent for you, and another scenario within which it would not be rational for you to believe this.
- 2.34 Describe a situation (preferably from your own life) within which someone luckily possesses a belief in a proposition P which is reflectively stable for them, but unluckily is unaware at the time of any reason for suspecting – what is actually the case – that her reasons for believing P to be true are not reflectively stable for her.
- 2.35 Describe a situation in which, by adopting the strategy of subjecting an argumentatively relevant belief to a full-scale internal review whenever you believe you have a reason to suspect that that belief may not be reflectively stable for you, you would undermine your goal of acquiring true beliefs and avoiding false ones.

2.4 “Bad” Cogent Arguments

Truth is a (more or less) objective property of propositions; and validity, soundness, reliability, and trustworthiness are (more or less) objective properties of arguments. They are objective in the sense that whether various objects possess these properties usually does not depend upon what anyone believes. It's true, for example, that Saturn currently has more than one moon, regardless of whether anyone recognizes this fact; and it would remain true even if everyone should (rationally) disagree with this claim. The property of cogency, however, involves an essential appeal to rationality and epistemic states. Cogency, therefore, has less to do with what properties an argument actually has, than with what it's rational for someone to believe about the properties of the argument in question. Perhaps surprisingly, then, cogent arguments can exhibit many different combinations of objective properties.

It's possible, for example, for a cogent argument to have (all) false premises. Suppose that for the past decade, your next-door neighbor, Betty, has flown the Hungarian flag outside her home, delivered home-made goulash to the elderly, and spoken to you incessantly and in great

detail about her Hungarian ancestry and her childhood years spent entirely in Budapest. Under these conditions, you reason as follows.

(B) 1. Betty was born in Budapest.

2. Betty was born east of Barcelona.

Arguably, (B) is cogent for you. It's rational for you to believe that Betty was born in Budapest. A careful review of the robust body of evidence to which you have access would give you no reason to think otherwise. Furthermore, the argument is valid. However, its premise is false, since Betty is a Slovenian spy born in Casablanca, and the story of her Hungarian roots is a complete fabrication. Sometimes, therefore, it's rational for you to believe an argument's conclusion, on the basis of what is in fact false information.

In saying that (B) is cogent for you in this context, we're of course not denying that, from a perspective that transcends your own personal point of view, your reasoning and your epistemic state are both significantly flawed. In (B), you reason from a false premise to a false conclusion. Clearly, then, there is an important sense, not captured by our cogency conditions, in which you ought *not* to be persuaded by (B). However, no single concept can capture every perspective on the evaluation of arguments. Our concept of cogency is designed to capture the crucial practical consideration that, given your epistemic state in constructing (B), you have no reason to believe that your reasoning is flawed. You are therefore not culpable or at fault for any errors you may unwittingly commit. In being persuaded by (B), you are behaving in an epistemically responsible fashion. In order to tell the full story about (B), we need only add that, while (B) is cogent for you, it unfortunately also has a false premise and a false conclusion.

It's possible, as well, for a cogent argument to contain premises that are collectively irrelevant to the argument's conclusion. Suppose that, sometime during the fourteenth century, you're watching a galleon sail due west out of Lisbon. You reason as follows.

(C) 1. A ship is sailing due west out of Lisbon.

2. If the ship keeps a steady course and sails far enough, it will fall off the edge of the world.

It's rational for you to believe the argument's true premise. And given the understanding of world geography popular during the fourteenth century, it's rational for you to believe that the premise provides strong evidence in support of the conclusion, and that (C) accordingly is a grounded, compact argument. But of course there's little chance of the ship falling off the edge of the world, no matter where or how far it sails, and the premise is irrelevant to (and therefore also fails to ground) the conclusion. Still, given your epistemic state, it's rational for you to be persuaded by the argument, and to believe its conclusion.

One must be cautious, however, in accusing individuals of arguing from irrelevant premises. This is arguably a relatively rare phenomenon, and careful listening, accompanied by sensitive probing of the author's epistemic state, often supports a very different interpretation. In (C), for example, a key premise may be missing, and in the related enthymematic argument

- (Ca) 1. A ship is sailing due west out of Lisbon.
 a. The world is flat.

-
2. If the ship keeps a steady course and sails far enough, it will fall off the edge of the world.

(1) and (a) together *are* relevant to (2). Given that (1) and (a) are both true, it becomes more likely, and in fact very likely, that (2) is true as well. (Ca) therefore, like (B), is arguably a grounded, compact, cogent argument with at least one false premise.

The analysis of arguments involving superficially prejudicial or superstitious beliefs often follows a similar pattern. Suppose you encounter someone who reasons about an acquaintance, employing a suitably derogatory epithet, as follows.

- (D) 1. Dumbo has big ears.

-
2. Dumbo has a low I.Q.

Most of us will want to say that (1) is irrelevant to (2). It's very likely, however, that the author of (D) is assuming implicitly that Dumbo's low I.Q. can be attributed to her membership in some

relevant reference class. So, for example, the argument might more accurately be depicted as

- (Da) 1. Dumbo has big ears.
 a. Most people with big ears have a low I.Q.
-
2. Dumbo has a low I.Q.

It's possible that the author of (Da) sincerely believes (a), but can say nothing further in its defense, to justify her confidence that (a) is true. Perhaps this belief is a product of indoctrination. So although it could be rational for her to believe the true proposition that, together, (1) and (a) are relevant to (2), it's not rational for her to believe (a). So (Da) fails to be cogent for her, even though she may be persuaded by it, and even though she won't be in a position to realize that it's not cogent for her until she subjects (a) to further critical scrutiny, and discovers that the evidence is wanting.

It's also possible, however, that it *is* rational, relative to her epistemic state, for the author of (Da) to believe (a). If challenged, she might be able to appeal to further background beliefs, perhaps citing numerous examples of people who have big ears and a low I.Q., which would justify her in having confidence that (a) is true. It's possible, however unlikely, that her belief in (a) would survive a careful and thorough critical review. So (Da) might be cogent for her. Suppose it is. It doesn't follow, of course, that (a) is true. The author of (Da) might be operating with an unrepresentative sample of big-eared people, or her I.Q. assessments may be biased. If (a) is false, she is in error. However, if (Da) is indeed cogent for her, then she is not culpable for that error, in the sense that she lacks either access to information or the necessary skills that would lead her to suspect, on reflection, that (a) is not true. Ex hypothesi, given her epistemic state, she is justified in feeling confident that (a) is true. On this reading, (Da) becomes, again like (B) and (Ca), a grounded, compact, cogent argument with at least one false premise.

Notwithstanding these important caveats, it is indeed possible for persons to argue cogently from irredeemably irrelevant premises. Sadly, these arguments occur not infrequently in the context of moral discourse. It's possible, for example, to believe that skin color is a primitive, morally relevant property – that is, a property which,

independently of any further considerations, morally justifies a certain kind of (usually discriminatory) treatment of an individual bearing that property. The Wizard of Oz, in arguing about the Wicked Witch of the West as follows

(E) 1. Elphaba has green skin.

2. Elphaba is not entitled to citizenship in the Emerald City.

may believe that Elphaba's green skin, in and of itself, establishes that she is not entitled to the rights and privileges of citizenship. Being a so-called moral particularist, the Wizard may regard this as a brute fact simply about Elphaba, and no one else. That is, he may not be willing to commit himself to any moral beliefs about green-skinned individuals in general. He may believe that moral beliefs ought to rest upon moral perceptions of particular cases and, since no one else in Oz has green skin, he hasn't perceived and therefore can't say anything about the moral entitlements of others bearing this anomalous property. This fact about the Wizard blocks the move of more accurately depicting (E) as, like (D), an enthymeme, with a suppressed premise (about the moral entitlements of a class of individuals to which Elphaba belongs) and a resultant set of genuinely relevant premises.

The Wizard, that is, may regard (E), unembellished in any fashion, as a grounded, compact argument. And it's possible, in the particular sense of rationality presently under consideration, that it's rational for him to believe this. It's possible that, relative to his epistemic state, he is justified in believing that (1) grounds (2). That is, it's possible that he is not culpable for holding this belief in that he currently lacks access to information that would lead him, even on careful reflection, to suspect that it is not true. It may be possible, for example, to non-culpably hold discriminatory moral beliefs if those beliefs are very widely held within a society that discourages critical reflection upon them. The Wizard himself may have become a victim of precisely that authoritarian regime that he has worked so hard to maintain over the years. Alternatively, these erroneous beliefs could just as well be the product of long, complex, and intensive (albeit warped) scholarly disputations. In either case, (E) could constitute a cogent argument for someone, even though it's composed entirely of irrelevant premises.

Finally, it's also possible for someone to argue cogently from premises that are genuinely relevant to but fail to ground the argument's conclusion. Suppose that Elphaba, upon discovering her sister's body trapped beneath Dorothy's house, were to reason as follows.

(F) 1. Dorothy killed my sister.

2. Dorothy deserves to be punished.

Given the evidence before her, it's rational for Elphaba to believe (1), and (1) is arguably relevant to (2). It could also be rational for Elphaba to believe that (1) grounds (2). Elphaba may subscribe to a strict moral code of honor, rigorously upheld within Oz, according to which the killing of a witch is a punishable offense under any circumstances whatsoever. In effect, Elphaba may believe that (F) is a valid argument, and this belief may survive internal critical scrutiny. But this may be a false or indefensible moral claim. The moral point of view, if you will, may recognize the relevance of mitigating circumstances, and may forbid the punishment of agents whose commission of acts of homicide are, like Dorothy's, both unintentional and nonnegligent.

EXERCISES

- 2.36 Describe a situation within which the truth of a proposition is dependent upon the content of someone's beliefs.
- 2.37 Describe a situation within which the soundness of an argument is dependent upon the content of someone's beliefs.
- 2.38 Is it possible for the validity of an argument to be dependent upon the content of someone's beliefs? If so, illustrate your answer with an example. If not, explain why not.
- 2.39 Explain why (B) is valid and (Ca) is invalid.
- 2.40 Which, if either, of (E) or (F) is compact? Justify your answer.
- 2.41 Find an argumentative passage in a recent book, newspaper, or magazine article that expresses an argument that is not cogent for you. Construct a canonical representation of that argument, explain why the argument is not cogent for you, and then describe a set of (perhaps actual) conditions that, should they obtain, would render the argument cogent for its author. Be

as specific as possible regarding the content of the author's beliefs.

- 2.42 Find an argumentative passage in a recent book, newspaper, or magazine article that argues, in a manner with which you rationally disagree, in support of a conclusion with which you rationally agree. Construct a canonical representation of that argument, explain why the argument is not cogent for you, and then construct another argument, in support of the same conclusion, which is cogent for you. Explain why the argument you have constructed is cogent for you.

2.5 “Good” Non-Cogent Arguments

In Chapter 1, we focused on the need to listen to authors, and to explore their personal points of view in attempting to describe the macrostructure of arguments as conceived by those individuals. Our discussion of cogency, here in Chapter 2, encourages us to pursue these explorations further, this time with respect to both authors and audience members, and indeed to anyone else interested in evaluating the probative force of an argument. To understand whether an argument is cogent for a particular individual, we need to understand her epistemic state. Only by listening to others can we begin to appreciate why individuals argue the way they do, why they respond to arguments the way they do, whether their argumentative behavior is epistemically responsible and, if it's not, where exactly the trouble lies.

In the [previous section](#), we established that it's possible for authors to argue cogently using arguments that are flawed in various respects. It's possible, for example, in the most extreme case, to argue cogently from false and irrelevant premises to a false conclusion. We won't make any assumptions about how common it is for authors to argue, without fault, from arguments that are, in some objective sense, problematic. But hopefully our discussion of arguments (B) through (F) further illustrated the value of listening. One must be careful not to dismiss, immediately and altogether, arguments that initially appear to be strange, unfamiliar, unconvincing, or even downright nonsensical. Such an argument may possess an “internal logic” that ought to be compelling for anyone who shares, with its author, relevant features of her personal point of view.

We've established that it's possible, therefore, for people to be rationally persuaded by (objectively) "bad" arguments. Conversely, it's also possible that people ought *not* to be persuaded by (objectively) "good" arguments. Suppose you know that you're going to be given a pet goat for your birthday, and that all goats are either male or female. You can therefore be certain that exactly one of the following arguments is sound.

- (G1) 1. My pet goat is either male or female.
2. My pet goat is not female.

3. My pet goat is male.

- (G2) 1. My pet goat is either male or female.
2. My pet goat is not male.

3. My pet goat is female.

But suppose further that it's not (yet) rational for you to believe premise (2) of either argument. Then neither (G1) nor (G2) is cogent for you, despite the fact that one of these arguments is sound.

The history of philosophy is full of somewhat more gripping examples of this same phenomenon, where individuals appropriately fail to be persuaded by what are possibly sound arguments on controversial topics. Consider, for example, the ontological argument for God's existence.

- (G3) 1. God is that than which nothing greater can be conceived.
2. To exist in reality is greater than to exist in thought alone.

3. God exists in reality.

The first premise defines who, or what, God is. Let's assume that it's true, or at least something that it's rational to believe according to whatever criteria ought to be employed in appraising definitions. Now, it's possible, as many have claimed, that premise (2) expresses a necessary truth, and that (G3) is a valid argument. So it's possible that (G3) is a sound argument as well. If so, many people nonetheless are unable, even on reflection, to recognize (2) as a true premise, or (G3) as a valid (or even a reliable) argument. So it's not rational for them to believe

(2), or to believe that (1) and (2) ground (3). Therefore, there are people for whom (G3) – possibly a compact argument in which true premises ground a true conclusion – is not a cogent argument. It's not rational for them to believe that God exists, on the basis of the evidence cited.

(G3) is admittedly a very difficult (possibly enthymematic) argument to fathom. Few would claim to understand it fully. So there probably will not be a consensus, among readers of this text, over its logical appraisal. Twenty-first-century readers are more likely to reach agreement on the following argument.

- (H) 1. It's morally reprehensible for any human being to be treated as chattel.
 2. Economic considerations can never morally justify a practice that treats humans in a morally reprehensible fashion.
-
3. Slavery is never a morally permissible practice.

(H) is probably cogent for most readers today, and (H) is probably a "good" compact argument with true premises grounding a true conclusion (though there may be disagreement over how well the premises ground the conclusion). To locate a (significantly large) dissenting audience, we need to go back in time. Aristotle, for example, being a proponent of the prevailing practice of slavery within the ancient Greek polis, would have rejected (H) as a non-cogent argument, since he would have denied that it's rational (for him or any other Greek citizen) to believe (1). Therefore, if *our* (rational) beliefs about slavery are correct, then (H) provides an actual historical example of a grounded, compact argument with true premises which nonetheless would not have been cogent for a celebrated Greek philosopher, or for the larger moral community of which he was a part.

Our discussion of (H), and of arguments (E) and (F) before it, may unfortunately create the false impression that there is a kind of sociopolitical conservatism inherent in our conception of rational belief. In each case, we (at least tacitly) explained someone's (ours, Aristotle's, the Wizard's, Dorothy's) rational beliefs through an appeal to the conventional moral wisdom prevailing in their respective societies. This provided a useful explanatory device, because it's easy to see why someone's beliefs more likely survive an internal critical review

if they're also endorsed by everyone with whom that person is in regular contact. For most people and most propositions Q , the opinions of others about the truth value of Q do constitute evidence for or against Q .

At the same time, it's important to see that this is a purely contingent feature of these examples. While there are probably significant limits on the extent to which anyone's rational beliefs can diverge from the widely shared beliefs of those around them, it is of course possible to hold radical, revolutionary, or highly idiosyncratic rational beliefs on any topic whatsoever. For example, there is nothing in our approach to prevent someone today from rejecting (H) as a non-cogent argument, and from arguing cogently that it's not rational for them to believe the first premise of this argument. The fact that such a position would be extremely unpopular today is no reason to deny that it could nevertheless be rationally defensible from some person's epistemic standpoint. What matters is whether that belief is reflectively stable for them at the time.

Unorthodox or revolutionary thinkers are sometimes right and sometimes wrong. Most people around them, however, will be strongly convinced that they are wrong. It doesn't follow that they *are* wrong, or that the strongly held convictions of most people constitute rational beliefs. Someone who argues today that (H), for example, is non-cogent for them should therefore not be dismissed simply because of the eccentricity of her (rational) beliefs. It's possible that she may be right. And it's possible that we may learn something from this person if we take the trouble to understand exactly why the argument fails to be cogent for her.

This is important since, in one respect, non-cogent arguments form a far less homogeneous class than cogent arguments. If argument A is cogent for person P , then it must be rational for P to believe that each of A 's premises is true, that together they ground A 's conclusion, and that A is compact. If A fails to be cogent for P , however, any one of nine possibilities may obtain. (These possibilities are depicted in Figure 3, where the tilde symbol " $\sim$ " is employed to indicate where a particular cogency condition fails to obtain.) Suppose that (H), for example, is not cogent for you.

First, it's possible that it's rational for you to believe that the premises ground the conclusion, but not rational for you to believe that the

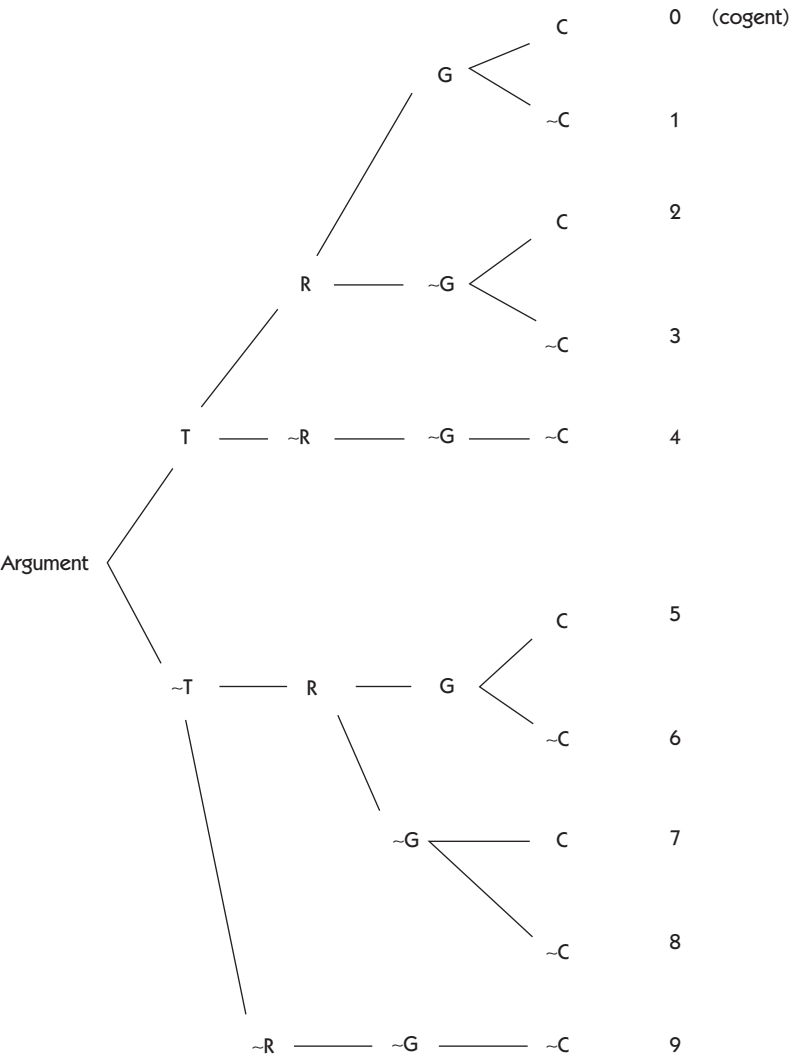


Figure 3. Nine Types of Non-Cogent Arguments

premises are all true. In an argument, like (H), with more than one premise, this condition will obtain provided there is at least one premise that it is not rational for you to believe. It's possible, as suggested earlier, that it's not rational for you to believe that it's necessarily morally reprehensible for a human being to be treated as someone's property. Someone, for example, might prefer slavery to starvation, or

to a life of destitution; and slavery, you might argue, cannot be morally reprehensible when an individual would prefer it as her chosen option, even under (possibly coercive) circumstances where starvation or destitution are her only other options. Or you might reject the second premise as untrue, arguing that economic necessity sometimes morally justifies what is typically unacceptable behavior. Or you might reject both premises.

Though it's not rational for you to believe each of (H)'s premises, in this scenario it could still be rational for you to believe that, were each of (H)'s premises true, they would provide you with enough evidence to justify belief in (H)'s conclusion. And it could also be rational for you to believe that each of (1) and (2) provide essential evidential support for (3). In this scenario, then, (H) fails the T condition for you but passes the remaining cogency conditions. (This scenario therefore corresponds to the fifth argument in Figure 3.)

Second, it's possible that it's rational for you to believe that all the premises of (H) are true, but not rational for you to believe that either of the premises is relevant to the argument's conclusion. It may be rational for you to believe, for example, that the practice of slavery is not sustained by economic considerations. And it may be rational for you to believe that the fact that a practice treats humans in a morally reprehensible manner is by itself no reason to morally prohibit that practice. These beliefs are certainly eccentric, and are likely to be sustained by comparably eccentric beliefs about the human condition, the nature of morality, or the incentives behind owning slaves. (For example, perhaps you rationally believe that all interpersonal relations are fundamentally exploitive and therefore, in some non-action-guiding sense, morally reprehensible.) In any case, (H) will fail to be cogent for you, since it's rational for you to believe that no premise within the argument plays any role in providing evidential support for (3). In this situation, for you (H) fails the R, G, and C conditions but passes the T condition. (This scenario therefore corresponds to the fourth argument in Figure 3.)

A third and perhaps more plausible possibility is that it might be rational for you to believe that each of the premises within (H) are true and relevant to the argument's conclusion, but not rational for you to believe that together they ground the conclusion. It might be rational for you to believe, for example, that slavery can be morally

justified on non-economic grounds as the least harmful practice available in certain extreme or desperate circumstances, notwithstanding its morally objectionable features. In this situation, for you (H) fails only the G condition. (This scenario therefore corresponds to the second argument in Figure 3.)

In the fourth instance, it might be rational for you to believe that each of the premises is relevant to the argument's conclusion, but not rational for you to believe that they are all true, or that they ground that conclusion. In this situation, for you (H) passes only the R and C conditions. (This scenario therefore corresponds to the seventh argument in Figure 3.)

In the next instance, it might not be rational for you to believe that the premises are all true, and it might not be rational for you to believe that either premise is relevant to the argument's conclusion. In this fifth case, in other words, the argument fails all four cogency conditions for you. An extremely harsh condemnation of (H) might, for example, take the form of it being rational for you to believe both that neither premise is true, and that neither premise plays any role in providing evidential support for (3). (This scenario therefore corresponds to the ninth argument in Figure 3.)

Suppose, however, that you have a more nuanced reaction to (H). Suppose that it's rational for you to believe that (2) is irrelevant to (3), but that (1) is not only true and relevant to (3), but also that it grounds (3) on its own. (Again, it might be rational for you to believe that the practice of slavery is not sustained by economic considerations.) So it's rational for you to believe that it's possible to establish (3) – via (1) – without employing proposition (2).

How should we accommodate this sort of case? We'll insist, though it may appear a bit artificial, that in this case (H) is nonetheless not cogent for you. This may appear artificial because, without (2), the argument is cogent for you. The rationale for insisting that (H) is not cogent for you is that it's not rational for you to be persuaded by the argument that the author of (H) has in fact presented. In presenting (H), its author *employs* (2) as a premise, i.e., as a proposition upon which she is relying in constructing an evidential case in support of (3). Since that *part* of the argument is problematic for you, the argument as a whole is non-cogent for you. It's not rational for you to be persuaded by *that* argument, even though, as noted

above, it would be rational for you to be persuaded by a closely related argument.

Our cogency conditions are, of course, designed to yield precisely this result. That is, an argument fails to be cogent for you provided that it's rational for you to believe, of even just one premise within the argument, that that premise plays no essential role in providing evidential support for the argument's conclusion. And this result holds *regardless* of what it's rational for you to believe about the remainder of the argument, since this is enough to guarantee that the argument fails the C condition for you. Since it's rational for you to believe that (H) offers altogether irrelevant information, it's rational for you to view (H) as a non-compact argument.

So in the case where it's rational for you to believe both that (2) is altogether irrelevant to (3) within (H), but that (1) is true and that (1) on its own grounds (3), (H) passes the R and G but fails the C condition for you. If it's also rational for you to believe that (2) is true, then (H) passes the T condition for you (and thereby corresponds to the first argument in Figure 3). In this scenario, the closely related, truncated argument from (1) to (3) would be cogent for you. If, however, it's not rational for you to believe that (2) is also true, then (H) also fails the T condition for you (and thereby corresponds to the sixth argument in Figure 3). On this last supposition, the argument from (1) to (3) would of course remain cogent for you.

However, should it be rational for you to believe, once again, that (2) is altogether irrelevant to (3) within (H), but also in this case that (1) is relevant to but fails to ground (3), then for you (H) would fail the G and C conditions while passing the R condition. If, in addition, it's rational for you to believe that both (1) and (2) are true, then (H) also passes the T condition for you (and thereby corresponds to the third argument in Figure 3). If, however, it's not rational for you to believe that both (1) and (2) are true, then (H) fails the T condition for you (and thereby corresponds to the eighth argument in Figure 3).

Within the final four cases just discussed, (H) is appraised as a non-compact argument because it includes an altogether irrelevant premise. However, non-compact arguments can fail to be cogent for individuals in another significantly different way. Because it's

difficult to illustrate this situation using (H), consider the following argument.

- (I)
1. Nada's set is a set with no members.
 2. Nada's set is a subset of every set.
-
3. Nada's set is the empty set.

(I) is a non-compact argument because, although each premise within the argument is relevant to (3), (I)'s premise set S contains two proper subsets each of which fails to provide less evidential support for (3) than does S itself. That is, while (I) is valid, the inference from (1) to (3) is also valid, as is the inference from (2) to (3). Therefore, neither premise plays an essential role in providing evidential support for the argument's conclusion. Given the presence of (1) within (I), (2) provides superfluous information; and given (2), (1) provides superfluous information.

(I) will fail the C condition, and will fail to be cogent for anyone who rationally believes that the argument is non-compact. Our (by now familiar) view is that it's rational for you to be persuaded by an argument just in case it's rational for you to be persuaded to believe the argument's conclusion *on the basis of the evidence cited*. So just as one ought not to be persuaded by an argument that offers *too little* evidence in support of its conclusion, one also ought not to be persuaded by an argument that offers *too much* evidence in support of its conclusion. Our concept of cogency, therefore, represents one particularly stringent kind of ideal evidentiary standard. In claiming that an argument A is cogent for you, you're claiming (in part) that the information contained within A 's premise set is packaged in such a way that each premise plays an essential role in providing evidence in support of A 's conclusion. Thus, just as the lack of evidence can adversely affect an argument's cogency, so the introduction of additional information can also adversely affect its cogency.

Therefore, once again, even if a particular argument is not cogent for you, a closely related argument might be. If you are the author of (I), then (I) is not cogent for you so long as it's rational for you to believe that (I) is non-compact. But presumably it's also rational for you to believe that (1) and (2) each provides a separate grounded

evidential path in support of (3). Therefore, it's rational for you to believe that (I) in effect conflates two separate arguments. The arguments from (1) to (3), and from (2) to (3) could each be cogent for you, and it would enhance clarity and effective communication if you were to present two separate arguments, each involving a separate valid inference in support of (3).

From the perspective of an audience member who shares these beliefs, it's awkward and misleading (and, we would add, false) to claim that you ought to be persuaded by an argument – say, (I) – when it's rational for you to believe that you have in fact been presented with two (or more) arguments. This point is underscored by the fact that you might conceivably form different evaluative judgments about the two (or more) arguments in question. Suppose, for example, that someone argues as follows.

- (J)
1. There are jackals at the zoo.
 2. There are jack rabbits at the zoo.
-
3. There are mammals at the zoo.

(J) is a valid, non-compact argument since (3) follows validly from either (1) or (2). However, it may be rational for you to believe that (1) is true, but not rational for you to believe that (2) is true, in which case only one of the valid arguments embedded within (J) would be cogent for you. In this case, it would be seriously misleading (and, we would add, false) to assert, without qualification, that (J) is cogent for you, i.e., that you ought to be persuaded by (J).

Suppose that the author of (J) suspects that you may claim, of at least one proposition within the premise set of (J), that it's not rational for you to believe that proposition. Then of course it makes sense that the author of (J) would want to gather as much evidence as she can in support of (3), given her interest in rationally persuading you of the truth of that proposition. So it's understandable that she would want to bring both (1) and (2) to your attention. Nonetheless, our view is that, instead of offering argument (J), clarity and effective communication would be enhanced were she to present two separate, single-premise arguments, each involving a separate valid inference in support of (3).

Both of (I) and (J) can likely be transformed into cogent arguments with the elimination of a single premise. But not every grounded, non-compact argument is so easily rectified. Argument (K), for example,

- (K) 1. 101 is a prime number.
 2. 103 is a prime number.

 23. 199 is a prime number.

-
24. There exists at least one prime number between 100 and 200.

requires more extensive modifications, and this sort of case reinforces the need to withhold judgments of cogency from non-compact arguments. Without the C condition of cogency, we would be forced to assert, unequivocally, that it could be rational for you to be persuaded by such an excessively bloated argument as (K).

Notice that, in claiming that (K) is not cogent for you, we're not necessarily claiming that it's not rational for you to *believe* proposition (24). If it's rational for you to believe that (K) is valid and that each of its premises is true, then of course it *is* rational for you to believe that (24) is also true. (The C condition, therefore, differs in this respect from, say, the G condition. If it's not rational for you to believe that an argument *A* is grounded, then it's not rational for you to believe *A*'s conclusion, on the basis of the evidence cited.) Rather, our view is that, as a non-compact argument, (K) is, to some extent, flawed *as an exercise in rational persuasion*. While it may be rational for you to believe (24) on the basis of the evidence cited, there are better ways – more elegant, more practical, more straightforward, and more transparent ways – of being rationally persuaded of the truth of (24).

Non-compact arguments and, in particular, arguments with superfluous premises therefore fail to satisfy a certain argumentative ideal. That having been said, we readily concede that an argument that fails to be cogent *solely* because it fails to be compact, is an argument that suffers from a relatively minor flaw, compared to, say, an argument that fails either the R or the G condition. Most non-compact arguments can be transformed into compact arguments simply by removing one or

more propositions from their respective premise sets. There certainly are more serious defects from which an argument can suffer.

Readers may have formed the impression, by this point, that the four cogency conditions fall into two rather disparate classes, with each class fulfilling a very different function. That is, it may appear that the T, R, and G conditions collectively articulate the conditions under which it is rational for someone to believe that an argument's conclusion is true on the basis of the evidence cited, and that the C condition imposes a quite different, independent kind of constraint on the means by which, ideally, this outcome ought to be achieved. This view is true to the extent that, as noted earlier, while it may be rational (on the basis of the evidence cited) to believe the conclusion of an argument that you recognize to be non-compact, it cannot similarly be rational (on the basis of the evidence cited) to believe the conclusion of an argument that you recognize to be ungrounded, or to contain an irrelevant premise set. Nonetheless, this bifurcation of the cogency conditions into two distinct classes, radically different in kind from one another, is a seriously misleading oversimplification.

In fact, *each* of the four cogency conditions places a kind of procedural constraint on the means by which rational persuasion should be achieved, since it is possible, in the case of each of the T, R, G, and C conditions, that an argument can fail that condition even though it is rational to believe that argument's conclusion, on the basis of the evidence cited. And this is because our conception of cogency represents an exacting ideal in one final significant respect.

Ideally, an author achieves her aim of rational persuasion when her audience is persuaded to believe a certain proposition as a result of considering an argument that matches the proffered argument as conceived by its author. As noted in Chapter 1, an author's goal is partially constituted by her means. An author wants you to understand the argument she has presented to you, because *that's* the argument by which, she believes, you ought to be persuaded.

Suppose, then, that you're presented with an argument *A* which fails the T condition for you. It may still be rational for you to believe *A*'s conclusion, on the basis of the evidence cited, since there may be some subset of propositions within *A*'s premise set such that it is rational for you to believe, both that each of the propositions within that subset is true, and that together they ground the argument's conclusion. *A*,

for example, could be a compact and reliable inductive generalization with many premises, which establishes its conclusion with a very high degree of probability. Nonetheless, because *A* contains one or more propositions within its premise set that are not rational for you to believe, ideally you shouldn't be persuaded by *that* argument. So the T condition places an independent constraint on how rational persuasion ought to be achieved.

Similarly, with respect to the R and G conditions, since there are different possible grounding relations and different ways in which the propositions within a premise set may provide relevant support for an argument's conclusion, we'll insist that an argument is cogent for you only if there is a match between an author's conception of the evidential relations obtaining within her argument, and what it's rational for you to believe about that argument. More precisely, we'll stipulate that if an author presents an argument with a specific grounding claim in mind, then, in order for that argument to be cogent for you, it must be rational for you to believe, not merely that the argument is grounded, but that it is grounded in the specific manner proposed by the argument's author. So, for example, suppose that some author presents the ontological argument as a valid argument in support of God's existence. Should you rationally believe that the ontological argument is (merely) reliable, then it could be rational for you to believe that the argument's conclusion is true on the basis of the evidence cited; but the argument presented by this author is not cogent for you, although a closely related argument might be. Similarly, if an author presents what she considers to be a reliable argument in support of some conclusion, that argument is not cogent for you should you rationally believe it to be valid, although a closely related argument might be cogent for you.

Furthermore, we'll also stipulate that if an author presents an argument with some specific understanding of how the propositions within the argument's premise set provide relevant support for her conclusion, then, in order for that argument to be cogent for you, it must be rational for you to believe, not merely that the premise set is relevant to the argument's conclusion, but that it is relevant in the specific manner proposed by the argument's author.

In the case of an embryonic argument, where an author has no fine-grained beliefs about how her premise set is relevant to or how it

grounds her conclusion, we'll stipulate that this argument passes the R and G conditions for you provided just that it's rational for you to share the author's belief that her premise set both is relevant to and grounds her conclusion, regardless of whether it's rational for you to possess any more fine-grained beliefs about these matters.

We'll return to the topic of how authors conceive of relevance and grounding relations in much greater detail later, beginning in Chapter 4. The key point, for the moment, is just that the four cogency conditions each place a procedural constraint on the means by which rational persuasion ought to be achieved, above and beyond the collective requirement that it must be rational for you to believe the conclusion of a cogent argument, on the basis of the evidence cited.

In conclusion, then, there are nine different ways in which someone can defensibly claim that an argument is non-cogent for them. We need to listen carefully to people if we are to appreciate, in a particular case, which, if any, of these nine scenarios obtains. It was suggested earlier that by doing this we remain open to the possibility of learning something from our interlocutors. As we explore their epistemic state, we may, to our surprise, become convinced that, on certain matters, they are right and we were wrong. Or we may at least reach a better understanding of what it is that has led them to (what we still regard as) erroneous beliefs. But even if none of this happens, there's another reason why it's still extremely important for us to understand exactly how the argument fails to be cogent for them. Rational belief is incompatible with dogmatism. A rational belief, by definition, is the product of (at least hypothetical) reflection, and rational believers are disposed to modify their beliefs in response to new information. Judgments of (cogency or) non-cogency, qua rational beliefs, are therefore also revisable subject to new information. But you won't likely hit upon the right strategy for rationally persuading someone to alter their judgment about an argument, and perhaps thereby correct the error of their ways, unless you understand the basis for that judgment.

Suppose that Max informs you that (H) is not cogent for her, but that you're strongly motivated nonetheless to convince her that she should endorse (H) so that she will become rationally persuaded that slavery is morally impermissible. In communicating that the argument is not cogent for her, Max is saying that, relative to her current epistemic

state, (H) is not a compelling argument for her. For some reason(s), she believes that it is not rational for her to believe (3), on the basis of (1) and (2). However, if you are ever going to be able to move Max to the point where she *can* accept (H) (or something like it) as a cogent argument, you need to understand her perceptions of (H)'s shortcomings. And to address these shortcomings you may need to shift the focus of the discussion beyond the confines of (H) itself, and to critically assess, perhaps by invoking new evidence, those underlying features of her broader epistemic state which support her appraisal of (H). In other words, Max's beliefs, although perhaps rational and the products of a careful internal review, are not necessarily immune from any kind of *external* criticism whatsoever.

Suppose, to take the most extreme case, that (H) fails all four cogency conditions for Max. To convince Max that (1) and (2) are true, you may need to expose her to new empirical information about the practice of slavery. To convince her that (1) and (2) together ground (3), you may first need to convince her that her current approach to moral reasoning is defective, and then provide her with new strategies for thinking about the nature of moral judgments. Or you may need to show her how to probe more rigorously, beyond her current capabilities, the consequences of some of her current moral convictions. Or you may need to persuade her to become critical of her current epistemic standards.

In any number of ways, then, Max's epistemic state, and subsequently her (rational) beliefs about (H) may alter. In other words, to eventually persuade Max that (H) is cogent, you may need to shift the focus temporarily away from (H) as such, and argue about other related matters. Just how you ought to do this will depend upon the exact nature of Max's dissatisfaction with (H). Throughout this entire process, you will of course be engaging with Max's current epistemic state, whatever that may be at any point in the discussion. That's the vantage point from which Max will appropriately form all judgments of (cogency or) non-cogency. But the important point here is that rational beliefs are revisable, and not immune from criticism. We can respect an individual's judgment of non-cogency, for example, without accepting that that judgment signals closure on the process of rational persuasion. Argumentation can continue, so long as epistemic states continue to evolve.

EXERCISES

- 2.43 Construct a sound argument about Betty that would not be cogent for the person, described earlier, who constructed (B). Justify your answer.
- 2.44 Construct a trustworthy argument about Dorothy that employs the premise “Dorothy killed the Wicked Witch of the West,” but that would not be cogent for the Wizard as he is described in section 2.4 of this text. Justify your answer and clearly identify any assumptions you need to make about Oz.
- 2.45 Suppose that some compact argument A , in support of conclusion P , contains a single premise that also expresses the proposition P . Is it possible for A to be cogent for you? If so, explain why and illustrate your answer with an example. If not, explain why not.
- 2.46 Repeat exercise 2.45, on the assumption that A is a single-premise argument.
- 2.47 Construct a pair of arguments, one with the conclusion that God exists and the other with the conclusion that God does not exist, where we can be certain that exactly one of the arguments must be sound. Is either argument cogent for you? Justify your answers.
- 2.48 Suppose you were able to construct two different arguments, each with the conclusion that God exists, and it was rational for you to believe that exactly one of these arguments must be sound. Suppose further, however, that neither argument is cogent for you. Could it be rational for you to believe, on the basis of this evidence, that God exists? Justify your answer.
- 2.49 Is (H) valid, reliable, or unreliable? Is (H) cogent for you? Justify your answers?
- 2.50 Explain how there can be a non-compact argument A , which cannot be transformed into a compact argument by the removal of one or more propositions from A 's premise set.
- 2.51 Each of the following entries identifies a type of argument. In each case, if this type of argument is possible, construct an example; and if this type of argument is not possible, explain why not.
- (a) a compact argument with a relevant premise set

- (b) a compact argument with an irrelevant premise set
- (c) a non-compact argument with a relevant premise set
- (d) a non-compact argument with an irrelevant premise set
- (e) a compact, grounded argument
- (f) a compact, ungrounded argument
- (g) a non-compact, grounded argument
- (h) a non-compact, ungrounded argument

2.52 For each of the following passages, construct a canonical representation of the argument(s) expressed within that passage, and describe one way in which someone (preferably yourself) could plausibly claim that the argument in question is not cogent for them. Provide enough information about the context and each person's epistemic state to make it rational for the individual in question to believe this claim about non-cogency.

- (a) Passage (a) from exercise 1.46.
- (b) "Dave decides to ask girls out based on what they drink. Dark bottled beers, dark mixed drinks and draught beer indicate a more masculine and 'closed' personality. This type of girl, he reasons, would 'sit beside you and watch the game and not get off her ass to do anything.' Conversely, women who drink beer in clear bottles are more feminine and confident. This type of woman 'knows she's being watched and likes it.'" – *The Toronto Star*, July 13, 2002
- (c) "'The abdomen is probably the worst place to store fat metabolically,' says James Hill, director of the Centre for Human Nutrition at the University of Colorado, 'because it increases the risk of diabetes and heart disease.'" – *The Toronto Star*, July 13, 2002
- (d) "War is obsolete, in short, because it can no longer produce a net good, even to the winner." – Wendell Berry, *Sex, Economy, Freedom and Community*
- (e) "Perhaps the best argument against modern warfare is that it cannot be conducted without atrocities. Although pre-modern warfare was also regularly accompanied by atrocities, they were less inevitable and tended to be on a lesser scale." – Claudia Card, *The Atrocity Paradigm*
- (f) Passage (f) from exercise 1.46.

- (g) "The stereotype of behaviour in traditional societies is that people act a certain way because things always have been done that way. In contrast, rational behaviour is aimed at achieving the goals, desires and ends that people have." – Robert Nozick, *The Nature of Rationality*
- (h) "Good sense is, of all things among men, the most equally distributed; for every one thinks himself so abundantly provided with it, that those even who are the most difficult to satisfy in everything else, do not usually desire a larger measure of this quality than they already possess." – René Descartes, *Discourse on Method*
- (i) "Moreover, an argument might be expressed independently of any rational agency – e.g., by unusual erosion on a hillside or an improbable arrangement of colored pebbles on a beach." – George Bowles, "Favorable Relevance and Argument," *Informal Logic* (1989)
- (j) Passage (j) from exercise 1.46.
- (k) "The more honest and intelligent we are thought to be, the less supporting argument we are apt to have to produce in order to convince someone of something. In an extreme, indeed, such a reputation can be harmful to oneself and others, lulling both parties into inattentiveness to evidence." – W. V. Quine and J. S. Ullian, *The Web of Belief*
- (l) "Radioactive elements disintegrate and eventually turn into lead. If matter has always existed there should be no radioactive elements left. The presence of uranium is scientific proof that matter has not always existed." – Cited in Alec Fisher, *The Logic of Real Arguments*, from a Worldwide Church of God pamphlet
- (m) Passage (m) from exercise 1.46.
- (n) "In itself, humility is nothing else but a true knowledge and awareness of oneself as one really is. For surely whoever truly saw and felt himself as he is, would truly be humble." – *The Cloud of Unknowing*
- (o) "Misanthropy is surely one of the hazards of putting cruelty first. If cruelty horrifies us we must, given the facts of daily life, always be in a state of outrage, overwhelmed like Hamlet by the density of evil." – Judith Shklar, *Ordinary Vices*

- (p) “Emotions need not be acknowledged in order to function epistemically. Like self-avowed emotions, suppressed rage and unacknowledged anxiety structure experience and orient us toward objects. We do not have to know what our emotions are to have our world structured by them.” – Catherine Z. Elgin, *Considered Judgment*
- (q) Passage (q) from exercise 1.46.
- (r) “‘Laws are made for one purpose only,’ he told me: ‘to hold us in check when our desires grow immoderate. As long as our desires are moderate we have no need of laws.’” – J. M. Coetzee, *Foe*
- (s) “The history of mankind is crowded with evidences proving that . . . the sinful dispositions of men can be subdued only by love; that evil can be exterminated only by good; that it is not safe to rely upon the strength of an arm to preserve us from harm; that there is great security in being gentle, long-suffering and abundant in mercy; that it is only the meek who shall inherit the earth; for those who take up the sword shall perish by the sword.” – William Lloyd Garrison, *The 1838 Declaration*

2.6 Epistemic States and Contexts

Our approach to cogency bases normative claims, about rational belief and epistemically responsible behavior, upon empirical claims about whether individuals would reach a point of reflective stability with respect to certain propositions, relative to their current epistemic state. Of course, whether it’s rational for someone to adopt a certain belief, or to be persuaded by a certain argument, will not depend upon such superficial empirical considerations as the individual’s mood at the time, her attentiveness to or interest in the topic at hand, or even whether she is strongly disposed to believe the proposition or to be persuaded by the argument in question. Rather, our approach to cogency appeals to “deep” empirical facts about the individual and her epistemic situation – facts that capture that individual’s most basic epistemic commitments, and that generate the most carefully considered reflective judgments of which she is capable at the time. A rational belief is a belief that would survive a brutally honest and meticulous

review of the nature of the evidence at hand, along with a comparably frank and rigorous assessment of which claims are best supported by that body of evidence. A rational belief expresses a settled conviction that would result from, and would not be undermined by, any such further reflection. Therefore, the factors that contribute to the production of rational belief include core elements of an individual's personality – elements that are not readily malleable, and over which people are typically able to exercise little conscious control, at least in the short term.

So, in an important sense, it's not up to you to decide at time t whether, say, an argument is cogent for you at t , although whether it is cogent for you may depend, to some considerable extent, upon who you are at t . But cogency and rational belief are not straightforwardly subject to willful manipulation. They emerge from what's relatively fixed, or given. At the same time, little, if anything, is inviolable. Rational beliefs can and ought to be revised in the light of new evidence; which in turn can alter your epistemic state; which in turn can affect the process by which it's determined whether a certain belief (or argument) is rational (or cogent) for you at the time.

We're interested in cogency because we're interested in acquiring true beliefs, and we've established that an individual's judgments of cogency are in part a reflection of her personality. But so far we've said nothing about the non-belief components of epistemic states. Yet, clearly, our hopes, fears, wishes, intentions, desires, and so on are significant features of our personality that can play a crucial role in both belief and rational belief formation.

Recall the author of (Da) – let's call her Delia – who sincerely believes that most people with big ears have a low I.Q. Now, suppose that, for deeply ingrained psychological reasons, Delia very much wants to believe this, and accordingly her I.Q. assessments of big-eared people are seriously distorted, and she has developed a habit of avoiding situations that would expose her to countervailing evidence. The problem is not that Delia is generally an unreflective person or a careless thinker. Rather, in order to satisfy her emotional needs, she has developed patterns of epistemic behavior that regularly lead her to avoid, ignore, or distort evidence, and thereby to acquire false beliefs, without consciously realizing what she is doing.

So Delia's emotions have played a central causal role in her believing premise (a) of (Da). Is it rational for her to believe (a)? That depends, of course, on whether (a) is reflectively stable for her. And to answer that question, we need to know more about Delia's psychological state.

Suppose, first, that Delia currently has no conscious access to the facts cited above. Perhaps she could come to realize that her epistemic behavior is being guided by repressed desires, but this realization may require professional assistance and a protracted regimen of psychotherapy. It is best to describe the scenario in which Delia takes up this challenge as one in which, with the aid of others, she becomes exposed to fundamentally new information (about herself). So, for Delia, psychotherapy does not constitute an *internal* review. And if Delia is literally incapable, prior to psychotherapy, of casting suspicion upon her belief in (a) through an internal critical review of that proposition, then we are committed to saying that Delia's belief in (a) is a rational belief at that time. Delia is being epistemically responsible in relying upon and feeling confident about the truth of (a). Her error is non-culpable. Therefore, since her emotions play a role in creating (what are for the time being) insurmountable obstacles to her realizing, upon reflection, how non-evidential (emotional) considerations have affected her in forming her belief in (a), it follows that her emotions play a role in both her belief formation and our assessment of the rationality of her beliefs.

If, however, it were true that, with the resources currently at her disposal and nothing more, Delia would discard her belief in (a) were she to conduct a critical internal review of that proposition, then it's not rational for her to believe (a) in her current epistemic state. Of course, in saying this we're not necessarily recommending that Delia should in fact conduct such a review. This review may be painful and time-consuming and, all things considered, correcting her belief in (a) may not be worth the time or the trouble, to her or to anyone else. What we are saying is that the normative status of her belief in (a) hinges upon the outcome of such a review. So if, in these circumstances, she continues to believe (a) and to accept (Da) as a cogent argument, her behavior is epistemically culpable. She is at fault, by her own standards, for being misled by this argument. It doesn't follow, of course, that she is culpable in any other non-epistemic (e.g., moral or legal) sense,

nor does it necessarily follow that she ought to be overtly blamed or censured in any manner for this error in judgment.

As noted earlier, it may be difficult for Delia, or others, to arrive at a confident judgment as to whether (a) is reflectively stable for Delia. Other things being equal, our judgments about this are likely to be more accurate the more we know about Delia and her epistemic state. But we allow for the possibility of rational disagreement, even rational disagreement based on the same body of evidence, over the rationality of Delia's belief in (a).

Delia's situation illustrates well why epistemic states should not be restricted to beliefs. Delia's emotional life has contributed to her forming a belief in (a), and her emotional life is part of what she needs to review in deciding whether she is justified in feeling confident that (a) is true. In order to reach a settled conviction, one way or the other, with respect to (a), Delia may need to understand how it is that she came to believe (a). She may need to confront the causal history of this belief. In the case of (a), it may appear that her affective states play a purely negative role, causing Delia only to distort or ignore evidential considerations. But we cannot assume that this will always be the case. It's possible that emotional states may constitute evidence in their own right. It's possible, in the following arguments, for example,

(L) 1. Anne feels compassion for the victims of the famine.

2. Anne should make a donation to the famine-relief fund.

(M) 1. Mackenzie is claustrophobic.

2. Spelunking is not the hobby for Mackenzie.

that in each case (1) provides (strong) evidence in support of (2).

So Delia's desires can play a significant causal role in determining whether she will attain reflective stability with respect to (a). If she comes to recognize the role played by her desires in the causal history of her belief in (a), she may come to reject that belief as being non-rational. So by including affective conditions within the category of epistemic states, we can continue to regard her internal critical review as a review of her *epistemic state*. And so it's best to understand an individual's epistemic state as including all and only those psychological states to which that individual is capable of acquiring conscious access

at the time. You can bring a belief or desire to bear upon your evaluation of a proposition or an argument only if you can gain conscious awareness of that belief or desire.

This case also illustrates the need to understand cogency in terms of contextual features, and not simply in terms of arguments and epistemic states. The cogency of an argument depends upon whether an individual would reach reflective stability, in their current epistemic state, with respect to certain propositions. Now, while this is certainly a (counterfactual) property of that individual's epistemic state – since, by definition, an individual will (not) reach reflective stability with respect to a proposition *Q* if, and only if, she herself consciously forms (does not form) a settled conviction, upon reflection, that *Q* is true – whether that property will obtain may depend upon factors that lie beyond the epistemic state in question.

For example, in the first envisaged scenario involving Delia, in her current epistemic state she is not able to gain access to certain unconscious desires that have played a crucial role in the causal history of her belief in (a). She is able to attain reflective stability with respect to that belief only because those desires remain repressed; so, as desires inaccessible to conscious awareness, they fall beyond the scope of Delia's epistemic state. But as factors influencing belief and the attainment of reflective stability, they remain argumentatively relevant. In other situations, psychologically inaccessible facts about an individual's brain chemistry, her fears, her frustrations, her I.Q., or the workings of an evil demon may also serve as determinants of rational belief, insofar as they influence the possibility of attaining reflective stability.

Suppose, for example, that an evil demon has programed you to believe and to reach reflective stability with respect to the proposition that there are no evil demons. It's therefore rational for you to believe that (false) proposition. You're not culpable for believing this, since that belief is a product of the most careful internal critical review of which you are capable. And of course you have absolutely no idea why you have in fact reached reflective stability. But that doesn't alter the fact that you have been programed by an external force to do so. We regard the evil demon, in this case, as part of the argumentatively relevant context, as her behavior, although psychologically inaccessible to you, plays a role in determining what you would believe upon careful reflection.

For these reasons, we treat cogency, as noted earlier, as a property of an ordered triple $\langle A, P, C \rangle$; that is, as a property of an argument, relative both to the epistemic state of a particular person, and to relevant psychologically inaccessible contextual features. While an individual's reflective judgment serves as *the* criterion of rational belief (and so, derivatively, as *the* criterion of cogency), factors beyond an individual's epistemic state may, unbeknownst to her, influence her reflective judgment. By thus incorporating context into our conception of cogency, we're able to explain, in a broader range of cases, exactly how reflective stability is (or is not) achieved, and therefore why an argument is (or is not) cogent for the individual in question.

EXERCISES

- 2.53 Explain how it's possible for two individuals, reflecting upon exactly the same body of evidence, to rationally disagree over whether some person P would reach reflective stability with respect to some proposition Q . Illustrate your answer with an example. If, however, you believe that this is not possible, explain why not.
- 2.54 Find a partner and flip a fair coin once. If you won the coin toss, write a two-page (double-spaced) argumentative essay in support of the claim that it's rational for you to believe that, in (L), (1) is relevant to (2). If you lost the coin toss, write a two-page (double-spaced) argumentative essay critically responding to your partner's essay.
- 2.55 Repeat exercise 2.54, this time with a different partner and with respect to the claim that it's rational for you to believe that, in (M), (1) is relevant to (2).
- 2.56 Suppose that argument A is cogent for person P and not cogent for person P' . Is it possible that, prior to carefully reflecting upon A , P and P' could share identical epistemic states? Justify your answer.
- 2.57 Suppose that argument A is cogent for person P and not cogent for person P' . Is it possible that, at the conclusion of a process of ideal reflection, P and P' could share identical epistemic states? Justify your answer.

2.7 Egalitarianism

Readers might be inclined to describe Delia as suffering from an affective impairment, as her emotional life interferes seriously with her ability to assess evidence properly and to form (in some other sense of the term) “rational” beliefs. This can be a fair and rational judgment on someone’s part, provided it’s understood that, within the context of this text, every judgment about the rationality of a belief (either one’s own or someone else’s) is a person-relative judgment, asserted from and appraised relative to a particular person’s epistemic state. So, for example, it’s rational for you to believe that Delia is behaving in an epistemically irresponsible fashion just in case that belief is reflectively stable for you. But your rational beliefs are in principle no less fallible, and no more immune from criticism than Delia’s, or anyone else’s. There is no neutral, impersonal, or transcendent standard to which we can appeal in privileging any one set of rational beliefs over any other. Your only option for rationally resolving any disagreement you may have with Delia is through further engagement in the practice of argumentation.

In fact, our rational disagreements with one another, even over more purely logical matters, can be very substantial indeed, since we’re not in a position to place *any* theoretical limits on the *content* of rational beliefs. Literally any belief can be a rational belief for someone, provided they are capable of reaching reflective stability with respect to that belief. So, for example, in defending her belief in (a), Delia might argue even more radically, but nonetheless cogently, as follows:

(N) 1. Nelly has big ears and a low I.Q.

a. Most people with big ears have a low I.Q.

That is, it could be rational for Delia to believe both that (1) is true, and that (1), on its own, grounds (a). Most people, of course, would rationally disagree, arguing that in (N) Delia has made an extremely hasty generalization, since Nelly constitutes a wildly unrepresentative sample in a world with literally millions of big-eared people. Most people would say that Delia is capable of reaching reflective stability with respect to the proposition that (1) grounds (a), only because

she is incapable of appreciating even the most rudimentary laws of thought.

It is not uncommon to witness others (not to mention ourselves) engaging in what, on reflection, we would consider to be outrageously flawed reasoning. Arguments of the following sort are not likely to appear unfamiliar.

(O) 1. Today is my birthday.

2. I have a good chance of winning tonight's lottery.

(P) 1. I have regularly played the lottery for over twenty years.

2. I have never had a winning lottery ticket.

3. I have a good chance of winning tonight's lottery.

(Q) 1. My horoscope said that today is my lucky day.

2. Something wonderful will happen to me today.

(R) 1. I had a terrifying dream last night.

2. Something terrible will happen to me today.

Our immediate impulse may be to summarily condemn any such argument on a first reading, and to ridicule its author. Chapter 1 encouraged us to resist this temptation, to listen empathetically, with care and sensitivity, to the argument's author, to pay attention to the argumentative context, and to make a serious effort to arrive at a charitable understanding of the argument as it is conceived by its author. Chapter 2 has proposed a conception of argument cogency according to which we can never establish the cogency (or non-cogency) of an argument, for any particular person, *a priori*. Each of (O)–(R), for example, could be cogent for various individuals, relative to their respective epistemic states. Typically, to establish whether an argument is cogent for someone, we need to learn more about their identity – their history; their beliefs, fears, and desires; what they hope for; how they think. We're never compelled, of course, to agree with their judgments of cogency.

But our own rational beliefs are not privileged over anyone else's, and there is little hope of learning from others, or of rationally persuading others of the error of their ways, unless we can first appreciate the true import of what they have to say, in its full richness, depth, and intricate complexity.

EXERCISES

- 2.58 For any *two* of the arguments (N), (O), (P), (Q), and (R), describe a set of conditions under which that argument would be cogent for you. Justify your answer. In carrying out this exercise, try to modify your current epistemic state as little as possible.
- 2.59 For each of the following passages, construct a canonical representation of the argument(s) expressed within that passage. Is the argument cogent for you? Justify your answer, making explicit reference, in each case, to the four conditions of argument cogency.
- (a) Passage (a) from exercise 1.49.
 - (b) "It's not up to you to decide what's rational for you to believe. At any given time, each person has some body of evidence. That evidence supports some statements and fails to support others. It is not in any sense 'up to you' which statements your evidence supports. . . . Whether it is rational for a person to believe a statement depends upon the evidence that person has and whether that evidence supports that statement." – Richard Feldman, *Reason and Argument*
 - (c) "I believe that all human communication, including logic, is motivated. I believe that, although a word processor may print out truths mechanically, people when they speak or write always want something and hope for something with passion and concern, even when part of that passion and concern is to deny it. In my readings of logic I have tried to understand such a denial. I do not see how any judgment on the 'truth' or 'falsity,' or correctness of what logicians say can be made until what logic 'means' in this deeper sense is made clear." – Andrea Nye, *Words of Power: A Feminist Reading of the History of Logic*
 - (d) Passage (S) from section 1.5.

- (e) “For each possible belief whose content is p , there is a thought with the same content. Someone who does not believe that p may nevertheless have the thought that p . . . Now it seems obvious that there are such thoughts, and that they are mental occurrences that can be dated. It would seem further that they endure for a certain time (often a very short time), and that they are entire for the whole time that they endure. The argument for the latter is that it seems to make no sense to speak of being, say, half-way through having a certain thought. One can be half-way through a certain *train* of thought, or half-way through expressing the thought in words, but the thought itself is just there, or it is not.” – D. M. Armstrong, *Belief, Truth and Knowledge*
- (f) “. . . birth-rate statistics from not only the developed world, but sub-Saharan Africa as well, tell us that slightly more females should exist than males. But, in fact, there are 100 million fewer living women than we should expect – 44 million fewer in China and 37 million fewer in India alone. The difference is due to inequalities in medical care and sustenance, as well as deliberate infanticide, together making up the world’s biggest issue of justice for women.” – Simon Blackburn, *Being Good*
- (g) Passage (h) from exercise 1.49.
- (h) Passage (i) from exercise 1.49.
- (i) “. . . communication, at its best, is called love; when it breaks down completely we call it war. And it is a sort of war that is going on now between human beings and the earth. It’s not that nature refuses to communicate with us, but that we no longer have a way to communicate with it. For millennia, primitives communicated with the earth and all its beings by means of rituals and festivals where all levels of the human were open to all levels of Nature.” – Dolores LaChapelle, *Earth Wisdom*
- (j) “The *Star Trek* dream of beaming matter from one place to another in an instant moved a step closer after scientists in Australia said they . . . made a beam of light disappear and regenerated it about a metre away, teleporting billions

of sub-atomic particles for the first time. . . . While such [a process] could potentially be capable of moving inanimate objects, it remains highly unlikely that a real-life Captain Kirk would ever say ‘Beam me up, Scotty.’ This is because the teletransportation technique destroys the object that is moved and then reconstructs it. Any human being who tried to travel in this way would probably be killed in the process.” – *The Ottawa Citizen*, June 18, 2002

(k) Passage (r) from exercise 1.49.

(l) Passage (s) from exercise 1.49.

(m) “Men and women are different. Not better or worse – different. Just about the only thing they have in common is that they belong to the same species. They live in different worlds, with different values and according to quite different sets of rules. Everyone knows this, but very few people, particularly men, are willing to admit it. The truth, however, is definitely out there. Look at the evidence. Around 50 percent of marriages end in divorce in Western countries, and most serious relations stop short of becoming long-term. Men and women of every culture, creed, and hue constantly argue over their partners’ opinions, behavior, attitudes, and beliefs.” – Barbara and Allan Pease, *Why Men Don’t Listen and Women Can’t Read Maps*

(n) “The biological evidence now available . . . shows convincingly that it is our hormones and brain wiring that are largely responsible for our attitudes, preferences, and behavior. This means that if boys and girls grew up on a deserted island with no organized society or parents to guide them, girls would still cuddle, touch, make friends, and play with dolls, while boys would compete mentally and physically with each other and form groups with a clear hierarchy.” – Barbara and Allan Pease, *Why Men Don’t Listen and Women Can’t Read Maps*

(o) “A person can be as careful as can be reasonably expected and still believe many propositions that are not epistemically rational for him. It is no more plausible to think that a carefully reflective person cannot be mistaken about whether he has good epistemic reasons to believe a proposition p than it

is to think that he cannot be mistaken about other difficult issues.” – Richard Foley, *The Theory of Epistemic Rationality*

- (p) “The cosmos is very big and very empty. Voyager 1, our most distant spacecraft, hurtling along at more than 38,000 miles per hour, will not reach the distance of even our sun’s nearest neighbor, the Alpha Centauri system . . . for more than 75,000 years. Ergo, the probability that an ETI [extraterrestrial intelligence] only slightly more advanced than we are will make contact is virtually nil.” – Michael Shermer, *Scientific American*, January 2002
- (q) “Any sufficiently advanced ETI is indistinguishable from God. God is typically described by Western religions as omniscient and omnipotent. Because we are far from possessing these traits, how can we possibly distinguish a God who has them absolutely from an ETI who merely has them copiously relative to us? We can’t. But if God were only relatively more knowing and powerful than we are, then by definition the deity *would* be an ETI!” – Michael Shermer, *Scientific American*, January 2002
- (r) “Eating meat helped make us what we are, in a social and biological sense. Under the pressure of the hunt, the human brain grew in size and complexity, and around the fire where the meat was cooked, human culture first flourished. Granting rights to animals may lift us up from the brutal world of predation, but it will entail the sacrifice of part of our identity – our own animality.” – Michael Pollan, *The New York Times Magazine*, November 10, 2002
- (s) “Genocide, after all, is an exercise in community building. A vigorous totalitarian order requires that the people be invested in the leaders’ scheme, and while genocide may be the most perverse and ambitious means to this end, it is also the most comprehensive.” – Philip Gourevitch, *We wish to inform you that tomorrow we will be killed with our families: Stories From Rwanda*
- (t) “Without doubt, the single most damaging aspect of the present economic system is that the expense of destroying the earth is largely absent from the prices set in the marketplace. A vital and key piece of information is therefore

missing in all levels of the economy.” – Paul Hawken, *The Ecology of Commerce*

- (u) “The mere fact that a rule or other commitment is bizarre does not demonstrate that either it or a system that includes it is untenable. Some systems we have no reservations about include counterintuitive components. . . . The Heisenberg uncertainty principle boggles the mind. If bizarreness were grounds for exclusion, such a principle would have no chance of being accepted. But the principle fits into contemporary physical theory and enables us to make sense of otherwise baffling findings. So it qualifies as a tenable physical principle.” – Catherine Z. Elgin, *Considered Judgment*
- (v) “God has endowed precious stones with miraculous powers. They succour man in body and soul, banish Satan and protect all living beings from his malice. Therefore the devil shuns precious stones.” – St. Hildegard von Bingen, *The Healing Powers of Nature*
- (w) “Perhaps you can judge the inner health of a land by the capacity of its people to do nothing – to lie abed musing, to amble about aimlessly, to sit having a coffee – because whoever can do nothing, letting his thoughts go where they may, must be at peace with himself.” – Sebastian de Grazia, *Of Time, Work and Leisure*
- (x) “Systematic healthy-mindedness, conceiving good as the essential and universal aspect of being, deliberately excludes evil from its field of vision. . . . [T]here is no doubt that healthy-mindedness is inadequate as a philosophical doctrine, because the evil facts which it refuses positively to account for are a genuine portion of reality; and they may after all be the best key to life’s significance, and possibly the only openers of our eyes to the deepest levels of truth.” – William James, *The Varieties of Religious Experience*
- (y) “I have a personal perspective on the world, from which my interests are at the front and centre of the stage, the interests of my family and friends are close behind, and the interests of strangers are pushed to the back and sides. But reason enables me to see that others have similarly subjective perspectives, and that from ‘the point of view of the universe’

my perspective is no more privileged than theirs. Thus my ability to reason shows me the possibility of detaching myself from my own perspective, and shows me what the universe might look like if I had no personal perspective.” – Peter Singer, *How Are We to Live?*

- 2.60 Locate an interesting, recently published argumentative text, and repeat exercise 2.59 employing that passage. Be sure to identify the source of your text.

Normality

3.1 The Normality Assumption

It follows, as a matter of definition, from the claims of the previous two chapters that no one can be the author of an argument unless she believes that argument to be cogent for at least one person. More specifically, every author believes that her argument is cogent for all the members of her (non-empty) intentional audience. But since this is a definitional claim, it doesn't tell us anything about who, as a matter of fact, is included within the author's intentional audience. It doesn't *identify* the individuals for whom the author believes her argument to be cogent. And to answer that empirical question, we need to probe more deeply into the author's epistemic state. We need to explore the author's conception of the composition of her intentional audience.

While a large number of possibilities exist, we'll be most interested in one particular standard case. We'll say that an argument *A* is *normal*, within a specific context *C*, just in case, within *C*, its author consistently believes *A* to be cogent both for herself and for all the members of her social audience. That is, a normal *author* – the author of a normal argument – consistently believes that she herself, as well as those whom others perceive to be the targets of her argument, ought to be persuaded by her own argument. It follows that a normal author consistently believes that the members of her social audience are members of her intentional audience as well. The reference to *consistent* beliefs rules out such bizarre possibilities as that a normal author could also

believe, inconsistently, that the argument in question is either not cogent for herself or not cogent for (some members of) her social audience. For convenience only, in what follows we'll usually omit any references to this consistency requirement.

In saying that a normal author of an argument *A* believes that *A* is cogent for the members of her social audience, we can't plausibly assume that a normal author must be able to infallibly identify those individuals who are *in fact* the members of her social audience. A normal author, like any author, operates with a certain conception of the identity of her social audience, and that conception may be more or less accurate. Therefore, strictly speaking, we'll understand a normal author to be someone who believes her argument to be cogent for herself as well as for all those individuals whom *she believes*, on that occasion, to be the members of her social audience. In what follows, however, we'll usually ignore this complication. Provided a normal author has a fairly typical (or statistically normal) understanding of prevailing communicative norms, her conception of her social audience should generally be (more or less) accurate. It follows that, in the majority of cases, a normal author's social audience is in fact a subset of her intentional audience.

An argument (author) is *abnormal*, within a particular context, just in case it (she) is not normal within that context. So the author of an abnormal argument either fails to believe that the argument is cogent for herself, or she fails to believe that it is cogent for all members of her social audience, or she has inconsistent beliefs about its cogency. However, as the author of a genuine argument, she must believe that the argument is cogent for someone – namely, for the members of her intentional audience. Failing to believe that an argument is cogent for some particular individual may take the form of either suspending judgment about whether the argument is cogent for that individual, or believing that it is not cogent for that individual.

It follows that, within any particular context, every argument (author) is either normal or abnormal, and no argument (author) is both normal and abnormal.

The concept of normality is a descriptive concept, and one that we will frequently employ in describing the actual practice of argumentation. The consistency qualification notwithstanding, a normal argument is defined simply with reference to an author's beliefs, and

not in terms of what it would be rational for her to believe. But listening to an author and understanding her beliefs also involves understanding her normative aspirations. An author believes (and typically wants) her argument to be cogent. But that she has this belief (and desire) is an empirical fact about her, and one that can assume very different forms. By speaking of normal and abnormal arguments, we can identify more precisely an author's normative aspirations about her own argument. It is of course a separate matter whether those aspirations are well-founded.

A normal author's belief in the cogency of her own argument is not necessarily either true or rational. Therefore, it doesn't follow that anyone in fact ought to be persuaded by a normal argument. A normal author may be mistaken in believing that her argument is cogent for herself, and she may be mistaken in believing that her argument is cogent for her social audience. And even if a normal author's belief in the cogency of her own argument is a true and rational belief, it doesn't follow that audience members will in fact be persuaded by her argument, since individuals may fail to be persuaded by arguments by which they ought to be persuaded. Audience members may behave in an epistemically irresponsible fashion. So, for a variety of reasons, not every normal argument succeeds in realizing the goal of rational persuasion.

We are interested in normal arguments for a different reason; namely, because, within certain common hermeneutical contexts, they exhibit a kind of transparent teleological structure that renders the author's overt argumentative behavior readily intelligible. In a normal argument, within the contexts in question, how an author appears to be acting matches her own conception of what she takes herself to be doing. This can best be appreciated by contrasting normal arguments with four other cases.

Assume, for all the situations which we'll be discussing in this section, that someone is engaged in overtly argumentative behavior – behavior that others, typically in light of standard linguistic and social conventions, interpret as involving the presentation of an argument to certain individuals – namely, those persons to whom we have been referring as the members of the author's social audience. So witnesses view this individual as being engaged with others in an attempt at rational persuasion. Assume further, as is very often the case, that

initially there is no evidence available regarding the exact content of the author's beliefs about the cogency of her own argument. That is, there's no evidence to suggest specifically that the individual in question believes her argument to be cogent for her social audience, and no evidence to support attributing to her any additional or any more fine-grained beliefs about whom she believes the argument to be cogent for.

Now, it's possible that this person may fail to believe that her "argument" is cogent from *any* (relevant) epistemic standpoint. She may believe, for example, that, at least for everyone with whom she is familiar, the "premises" that she has offered fail to justify belief in her "conclusion." That is, she may have no one in mind, under any description, for whom she believes her "argument" to be cogent. In other words, this "argument" has no intentional audience. It follows that this individual is not sincerely engaged in the practice of rational persuasion, and that she is in fact not the author of any (normal or abnormal) argument. Therefore, were her beliefs, about the (lack of) cogency of her own (apparent) argument, to become transparent to those involved in the argumentative exchange, her overtly argumentative behavior would begin to exhibit a kind of *prima facie* unintelligibility. That is, were a social audience member, for example, to discover that the individual in question holds these beliefs, she would initially be at a loss to understand what is going on. She would need to search for evidence, beyond the boundaries of the argumentative exchange itself, that would explain why this individual is presenting herself to others as if she were offering an argument, when she is not.

Possibly she's attempting to manipulate her social audience into believing a claim that she herself believes to be rationally indefensible, both from her own epistemic standpoint and from the standpoint of that audience. Deception may be required, since she may believe that her audience could not be persuaded to adopt the claim in question unless they're duped into believing that they're engaged in a genuine process of rational persuasion. So, for her to succeed, she must disguise her true motives and block public perceptions of her own beliefs about what she takes herself to be doing. In order to succeed, she must create a non-transparent communicative environment.

Abnormal arguments, of which – cases of inconsistency aside – there are three basic types, share important structural features with this case.

In the first kind of abnormal argument, an author believes her argument to be cogent for herself, but fails to believe that (at least in their current epistemic state) it is cogent for (at least some) members of her social audience. Now, if this author is engaged in overtly argumentative behavior that fails to signal in any way the abnormality of her argument, then that behavior will once again begin to exhibit a kind of *prima facie* unintelligibility, should her beliefs about the cogency of her own argument become transparent to others. Anyone who is made aware of those beliefs would reasonably become puzzled. Why, they might ask, is this individual (conventionally) presenting herself as offering evidence in support of some conclusion to an audience, with the apparent aim of rationally persuading them to adopt that conclusion, when she herself fails to believe that they (i.e., at least some, and perhaps all of them) ought to be so persuaded? Once again, there's a significant dissonance between how this individual is presenting herself publicly, and what she takes herself to be doing. As in the previous case, the explanation may be that she is manipulating her audience into adopting a belief under the pretext of rational persuasion. So, once again, disclosure about her true psychological state would likely prevent her from achieving her aim.

The second kind of abnormal argument displays a similar asymmetry. Here an abnormal author believes her argument to be cogent for all the members of her social audience, but fails to believe that (at least in her current epistemic state) it is cogent for herself. Now, if this asymmetry is not signalled in any way by the author's overt behavior, then discovering the content of the author's beliefs about the cogency of her own argument would again raise concerns about the *prima facie* intelligibility of her behavior. Suppose that you're a social audience member who comes to realize that you are being presented with an argument by some author who believes the argument to be cogent for you but, let's say, also believes that it's not cogent for herself. Clearly, then, there must be, in the author's judgment, some relevant difference between your respective epistemic states. And, for any number of reasons, such an author will of course ultimately endorse her own epistemic state, and not yours. You might therefore reasonably wonder why the author is attempting to rationally persuade you to adopt the conclusion of the argument in question, rather than attempting to rationally persuade you to alter those features of your epistemic state which (in

the author's opinion) render the argument cogent for you, but not for her. That is, you may reasonably wonder why the author is apparently willing to tolerate this difference of opinion about the cogency of the argument in question, rather than attempting to rationally convince you to share her judgment about the non-cogency of the argument. You may reasonably wonder whether you are being manipulated, possibly in a condescending or paternalistic fashion. Or you may worry that the author may very well be right. You may want to investigate why the argument is (allegedly) not cogent from the author's epistemic standpoint, perhaps because you want to test whether your own epistemic convictions are defensible in light of the challenge implicitly posed by her judgment of non-cogency. Therefore, disclosure once again runs the risk of defeating the author's purpose (in this case, of genuinely achieving rational persuasion), since these facts about the author's beliefs may raise suspicions for you about the cogency of the argument relative to your own epistemic state.

In the third and final basic type of abnormal argument, an author fails to believe that her argument is cogent for herself, and she also fails to believe that it is cogent for all the members of her social audience. (Her intentional audience, therefore, resides elsewhere.) This type of argument raises no additional points of theoretical interest. The same results hold, given public disclosure of the author's beliefs about cogency, within the context of the hermeneutical exercise presently under consideration.

These four cases – three of which involve abnormal arguments – therefore share a number of striking features. Social transparency concerning the author's beliefs about the cogency of her own argument threatens to undermine her efforts to achieve her true aim, whatever that aim may be. If someone is apparently attempting to rationally persuade you to adopt some conclusion, you may reasonably wonder whether you should be so persuaded were you to discover either that they don't believe that the "argument" is cogent for anyone, or that they don't believe that the argument is cogent for you, or that they don't believe that it is cogent for themselves. Notice that your doubts in each case arise from structural features of the argumentative exchange, and have nothing to do with the content of the arguments in question.

Notice further that we're not claiming that any of these cases are intrinsically unintelligible, or that none of these individuals could ever

succeed in achieving their aims. We're claiming only that there is a *prima facie* unintelligibility in witnessing someone who is behaving in a fashion that others would (conventionally) interpret to involve the presentation of an argument, and subsequently discovering that that individual fails to believe that her own argument is cogent for all those who are perceived as being involved in the argumentative exchange, either because she fails to believe that her argument is cogent for anyone, for her socially constructed audience, or for herself. Disclosure of further facts about the individual or the argumentative context may dispel any sense of anomaly, however.

It is also important to realize that "normal" and "abnormal" are not pejorative terms. While we've given examples of abnormal arguments that are deceptive or manipulative in nature, these are not essential characteristics of abnormal arguments. Imagine, for example, that Norma is experiencing difficulty constructing an argumentative term paper that is cogent both for herself and for her audience. Abby could come to Norma's assistance by taking on the persona of an abnormal author and constructing arguments that are cogent for Norma but not cogent from Abby's own epistemic state. There is nothing inherently deceptive or manipulative about this, since Abby may inform Norma from the outset that these are not arguments she would personally endorse. She may also explain to Norma why this is so, and Abby and Norma may thereby come to understand each other better through the realization that they rationally disagree on certain issues. But Abby's behavior is perfectly intelligible and, worries about the possibility of plagiarism aside, morally praiseworthy. So abnormal authors do not necessarily argue from base motives, and abnormal arguments are not necessarily morally disreputable acts.

In fact, normal authors are themselves capable of treachery. A normal author is someone who sincerely believes that the argument she is presenting is cogent both for herself and for her social audience. But nothing follows, from this claim, about how normal authors must *present* their arguments to audience members. Lying certainly remains an option. A normal author, wanting to downplay her argument's probative force, could present a normal argument as if it were abnormal, by explicitly claiming either that it's cogent only for herself or, conversely, only for her audience. Or a normal author might so desperately want her social audience to accept the conclusion of her argument that

she might deliberately threaten or intimidate them by the manner in which she presents that argument. So normal authors may be dishonest or manipulative, and they may possess false or irrational beliefs about the cogency of their own arguments.

In fact, one can't confidently infer anything about the moral character of authors, or their respective argumentative acts, merely on the assumption that they are or appear to be either normal or abnormal. For one thing, although both normal and abnormal authors are capable of deceit or manipulation, this kind of behavior is sometimes morally justifiable. But there's a more interesting and less obvious interpretational point to be made here as well. A (normal or abnormal) author may communicate with others while, perhaps out of ignorance or as a result of false rational beliefs, non-culpably violating certain social norms governing argumentative discourse. Through no fault of her own, an author may be misunderstood (also perhaps non-culpably) by others. So, through no fault of her own, a normal (abnormal) author may appear to others as being abnormal (normal). Similarly, through no fault of her own, someone may appear to be engaged in deceptive or manipulative acts, for example, when she is not. In this regard, normal and abnormal authors are on an equal footing.

Nonetheless, with respect to certain hermeneutical practices, normal authors occupy a position of privilege. Assume, once again, that someone is engaged in behavior that witnesses would interpret to involve the presentation of an argument to a certain social audience, though there's no evidence to support attributing to the author any specific, non-trivial beliefs about whom she believes the argument to be cogent for. Now, were it to be disclosed that the author believes her argument to be cogent both for herself and for the members of her social audience, then from a structural point of view – i.e., setting aside any concerns one may have with respect to the content of the argument – nothing untoward would follow. Audience members, for example, would have no reason to become puzzled over the intelligibility of the author's overt behavior, and no reason to question her motives or to view her argument with suspicion. In fact, were the author's beliefs to become transparent, this would likely simply reinforce what audience members had suspected all along. If someone presents herself as attempting to rationally persuade others to adopt a certain conclusion, and if she makes no effort to qualify this exercise

in any way, or to personally dissociate herself in any manner from the argument, then others will most likely assume that this is one of those straightforward cases in which someone has first rationally persuaded herself of the truth of some conclusion, and now wants to extend that same argument, with the same aim of rational persuasion in mind, to others.

So in the case of a normal argument, in the specific scenarios presently under consideration, how an author (conventionally) appears to others matches her own conception of what she takes herself to be doing. With respect to her beliefs about whom the argument is cogent for, her personal psychological convictions correspond to the public perception of her behavior. So social transparency about her beliefs does not run the risk of undermining the author's efforts in realizing her true aim.

Even in the unusual situation where a normal author's beliefs about the identity of her social audience are substantially mistaken, there is still a significant "match" between what that author takes herself to be doing and how others perceive her overt behavior. Suppose a normal author understands herself to be directing her argument toward one group of individuals, whereas others interpret her to be addressing an entirely different group. Despite this disagreement, the normal author in question *is* engaged, as she appears to be, in an attempt to rationally persuade some group of individuals each of whom, she sincerely believes, ought to be persuaded by what she has to say. We may disagree with this author about the cogency of her argument for various audiences. But factual disagreements over the identity of an author's social audience will not, as a rule, generate concerns about the intelligibility or integrity of that author's apparent project.

For the remainder of this text, then, we'll adopt the following methodological stance. Whenever we witness (what we take to be) the presentation of an argument by some author, we'll assume that the argument is normal, provided there's no available evidence to the contrary. Call this *the normality assumption*. In other words, we'll assume that there is an interpretational presumption in favor of normality. We'll assume that an argument is normal unless we have evidence to suggest that it is not.

We'll adopt the normality assumption for the following four reasons. First, we have a strong interest, in this text, in listening to authors and

in coming to understand how they themselves conceive of the arguments they present to others. Since it's a necessary condition of an author's presenting an argument that she believes that argument to be cogent for certain individuals, as listeners we have a strong interest in understanding, as precisely as possible, the content of those beliefs. Therefore, other things being equal, it would be unfortunate if we were forced to refrain from making any further judgments (i.e., beyond trivial, definitional judgments about the author's intentional audience) about this matter. In the absence of further information about the content of an author's beliefs about the cogency of her own argument, we should be interested in finding a principled way of making educated guesses about the factual content of those beliefs. The normality assumption allows us to do this, by extending the scope of an author's beliefs about the cogency of her own argument both to herself and to the members of her social audience.

Second, other things being equal, it's reasonable to interpret the argumentative behavior of others in a way that does not render their behavior *prima facie* unintelligible. That is, if there is no reason to adopt an interpretation that renders someone's behavior (at least somewhat) inexplicable, it's preferable to adopt an interpretation whereby we can readily make sense of what that person is doing, so long as such an interpretation is supported at least as well as any competing interpretation.

Now, we've stipulated that the normality assumption operates only in those situations – like those discussed earlier – where there is no available evidence to suggest that the argument being presented is abnormal. That is, there's nothing to suggest that the author fails to believe either that the argument is cogent for herself or that it is cogent for her social audience. Since, according to the arguments offered earlier in this section, any interpretation of an author as presenting an abnormal argument in this type of situation would be *prima facie* unintelligible, it's reasonable to prefer an (at least equally) well-supported interpretation according to which that author is offering a normal argument. That interpretation, as argued earlier, renders her behavior readily intelligible. So, given that we'd prefer not to suspend judgment about the factual content of an author's beliefs about the cogency of her own argument, it's reasonable to assume that her argument is normal.

This second reason is really an appeal to simplicity. Given that we're interested in trying to understand what someone takes herself to be doing in (apparently) offering an argument, other things being equal, it's preferable to adopt an interpretation that immediately makes sense of that person's argumentative behavior over an interpretation that would lead to further complicating factors. Assuming anything but normality, in the scenarios under consideration, would, for no good reason, simply introduce further interpretational quandaries.

The third reason for adopting the normality assumption has both a moral and a prudential dimension: assuming normality is one way of showing respect to an (apparent) author. In the situations within which the normality assumption applies, a normal author is someone who satisfies a kind of sincerity condition insofar as her argumentatively relevant beliefs and intentions coincide with the beliefs and intentions that others would most likely attribute to her – namely, her belief that her argument is cogent both for herself and for her social audience, and her intention to achieve rational persuasion. (A normal author may of course deceive us about other matters, or even about these matters in different contexts.) To that extent, she is what she appears to be and, were audience members to discover the contents of these beliefs and intentions, this would not create an impediment to that author achieving her true goals. Therefore, we can show respect to an author by assuming that she is behaving in a respectful, sincere, transparent, non-manipulative manner toward others, when there is no evidence to suggest otherwise.

Arguably, this is something we owe one another. If there's no reason to believe that someone is withholding facts about themselves that, if disclosed, would run the risk of undermining their true intentions, then it seems fair and reasonable to interpret their words and their behavior at face value. We ought to assume that others are sincere unless we have reason to regard them with suspicion. We ought to trust that they are what they appear to be.

Extending trust in this manner is of course not risk-free. The normality assumption can lead us astray into adopting false beliefs in particular circumstances, specifically, by attributing normal beliefs to an abnormal author. Even in self-interested terms, however, the benefits likely outweigh the risks. Withholding trust from others, without any provocation, is usually counterproductive. Extending respect and

building trust between interlocutors, on the other hand, usually fosters cooperation and collegiality, and in general tends to promote the social practice of argumentation. For reasons outlined in Chapter 1, this tends to serve the interests of all members of society.

Finally, the normality assumption encourages us to search for common ground between an author and her social audience. A normal author expresses a kind of epistemic solidarity with her audience. She operates with the understanding that shared evidential commitments ought to move her and her audience toward a further shared conviction in the truth of some conclusion. So normal argumentation aims to bring people closer together, epistemically. This may not be a bad thing, in an increasingly socially disconnected world that tends to accentuate the significance of superficial interpersonal differences, while being far less willing to explore what may follow from a recognition of, say, our common humanity. The presumption in favor of normal argumentation encourages us to listen to others – *any* other – as a means toward better understanding ourselves.

The normality assumption has widespread applicability, although in another sense it's a very conservative interpretational tool. It applies in a wide range of cases since it is very common to witness the (apparent) presentation of an argument without having access to any evidence concerning specifically the (apparent) author's beliefs about the cogency of her own argument. Notice that it does not follow, from the widespread applicability of the normality assumption, that normal arguments themselves are very common. In fact, it's logically possible that normal arguments are quite rare. However, the normality assumption partially codifies existing linguistic practice, at least to the extent that arguers are sensitive to issues arising from the person-relative nature of cogency. And it's unlikely that a social presumption in favor of normal arguments would have emerged if that presumption were not frequently supported by the facts. So it's likely that normal arguments are quite common, though an empirical investigation would be required to settle this question.

The normality assumption is conservative in the sense that the presumption of normality is defeasible, and in fact *is* defeated by *any* evidence of abnormality whatsoever. If there is evidence of abnormality and no evidence of normality within some context, then the normality assumption fails to apply, and it's reasonable to interpret the argument

in question as being abnormal, provided the evidence of abnormality is substantial enough to support this interpretation. (Sometimes it's reasonable to override very slim evidence in support of a *prima facie* problematic interpretation, and elect instead to suspend judgment.) If there is competing evidence of both normality and abnormality, then the normality assumption again fails to apply. In this case, one should weigh the competing evidence as best one can, and either adopt the most defensible interpretation or suspend judgment. The normality assumption itself is neutral as to what, in various contexts, constitutes evidence of either normality or abnormality. There will be plenty of straightforward cases, as well as plenty of difficult cases over which there may be rational disagreement.

EXERCISES

- 3.1 Prove the proposition expressed by the first sentence of this section.
- 3.2 True or false? If the claim is false, explain why it's false.
 - (a) An author's belief in the cogency of her own argument may be a non-rational belief.
 - (b) A normal author's belief in the cogency of her own argument may be a non-rational belief.
 - (c) Social audience members ought to be persuaded by normal arguments.
 - (d) Intentional audience members ought to be persuaded by normal arguments.
 - (e) An abnormal author must either believe that her argument is not cogent for herself or believe that it is not cogent for her social audience.
 - (f) An abnormal author must either fail to believe that her argument is cogent for herself or fail to believe that it is cogent for her social audience.
 - (g) An abnormal author may, in some context *C*, both believe that argument *A* is not cogent for herself and not believe that *A* is not cogent for herself.
 - (h) An abnormal author may, in some context *C*, both believe that argument *A* is cogent for herself and believe that argument *A* is not cogent for herself.

- (i) An abnormal author may, in some context *C*, both believe that argument *A* is cogent for herself and believe that *A* is cogent for the majority of her social audience.
 - (j) An abnormal author may, in some context *C*, believe, of an argument *A*, that *A* fails to be cogent for a minority of her intentional audience.
 - (k) The normality assumption applies in contexts where there is no evidence that the argument is normal and no evidence that it is abnormal.
 - (l) The normality assumption applies in contexts where there is evidence that the argument is normal and no evidence that it is abnormal.
 - (m) A normal author must be a member of her own intentional audience.
 - (n) A normal author's social audience must be at least a subset of her intentional audience.
 - (o) A normal author's social audience must be identical with her intentional audience.
 - (p) A normal author's social audience may be identical with her intentional audience.
- 3.3 Assume that, as an instance of the third basic type of abnormal argument discussed above, an author believes that her argument is not cogent for any member of her social audience. Describe a situation, involving a specific argument, within which public disclosure of this author's beliefs about the cogency of her own argument would render her overt argumentative behavior *prima facie* unintelligible, and would threaten to undermine her efforts to achieve her true aim. Justify your answer.
- 3.4 Describe a situation within which a normal author might wish that it were the case that her argument was not normal. Illustrate your answer with an example.
- 3.5 Describe a situation within which it would be morally justifiable for a normal author to deceive her audience in some way. Justify your answer.
- 3.6 Describe a situation within which it would not be morally justifiable for you to deceive your audience in some way, even though your audience will not adopt the conclusion of your normal argument unless they are so deceived. Justify your answer.

- 3.7 Describe a situation within which, through no fault of her own, a normal author would reasonably be perceived to be an abnormal author.
- 3.8 Describe a situation within which, through no fault of her own, an abnormal author would reasonably be perceived to be a normal author.
- 3.9 Describe a situation within which, through no fault of her own, a normal author would be substantially mistaken about the identity of her social audience.
- 3.10 Suppose that as an audience member, after being presented with an argument *A* by some author, you form the belief that *A* is not cogent for you. Describe one situation within which this belief would constitute evidence for you of *A*'s abnormality, and another situation within which it would not.
- 3.11 Suppose you believe that *A* is a sound argument. Would it be possible for you to present *A* as a normal author in one context, and as an abnormal author in some other context? If so, explain how and illustrate your answer with an example. If not, explain why not.

3.2 Strength as Cogency

One of our principal aims in this text is to encourage and facilitate the efforts of individuals interested in describing arguments as they are conceived by their authors. With the normality assumption and the principle of charity, we now have in hand two interpretational strategies to which we can appeal, in carrying out this project, in situations where the evidence at our disposal fails to provide us with all the information we need or desire. The two strategies are independent of one another, of course, since the principle of charity helps us in determining the identity of an author's *argument*, while the normality assumption enables us to form principled judgments about an author's *beliefs* about the cogency of her own argument. So neither strategy can be derived from the other. Nonetheless, they are usefully related, in that the normality assumption can assist us in better understanding the dictates of charity.

We argued in Chapter 1 that charity instructs us, roughly, to adopt the strongest interpretation of an argument that is compatible with the

available evidence, without itself either identifying that interpretation or specifying any criteria for measuring argument strength. Therefore, the principle of charity may reasonably be employed by different people, operating under different assumptions and with different aims, in different ways.

Suppose, however, that you are attempting to ascertain the identity of some argument that, on independent grounds, you assume to be normal. That is, you're assuming that some author believes her argument to be cogent for all the parties involved in some argumentative exchange – for herself, for all the members of her social audience, and, trivially, for all the members of her intentional audience. Therefore, you are in effect assuming that this author believes that she has conducted herself in an epistemically responsible fashion in attempting to rationally persuade these individuals, since an author behaves in an epistemically responsible fashion, with respect to a certain audience, by presenting that audience with an argument that is cogent for them. So this individual, like the author of any normal argument, believes that she has done everything that can reasonably be expected of her, within this argumentative context, by presenting her audience with an argument that would persuade them were they to respond in a rational fashion.

It's reasonable to assume, then, that the author in question is satisfied with the "strength" of her argument. And since we're interested in describing arguments as they are conceived by their authors, it's reasonable for the principle of charity to be informed, within these contexts, by the author's own convictions about the cogency of her argument. A normal author could not reasonably be dissatisfied as such with an interpretation of her argument as one that is cogent for all parties concerned – when she herself (we are assuming) conceives of the argument in precisely this way, and when such an interpretation casts her own epistemic behavior in such a favorable light. The "as such" qualification covers the possibility, to be discussed shortly, that a normal author may of course prefer certain cogent interpretations over others. But the main point here is that she cannot reasonably object to a construal of her argument as a cogent argument.

Henceforth, therefore, whenever we apply the principle of charity to a normal argument, and we have to choose between (a) one or more interpretations of that argument as being cogent for all parties involved

in the argumentative exchange and (b) one or more interpretations of that argument as being non-cogent for at least one such party, we'll regard each of the arguments within the former class as being *stronger* than any of the arguments within the latter class. Roughly speaking, that is, when dealing with normal arguments, we'll interpret argument strength in terms of argument cogency.

There's no reason *in general* to interpret strength as cogency. When we consider arguments from a purely "objective" point of view, for example, cogency and authorial beliefs are irrelevant. Other things being equal, valid arguments are objectively stronger than reliable arguments insofar as they establish a tighter connection between their premises and their conclusions. For the same reason, other things being equal, more reliable arguments are objectively stronger than less reliable arguments. And other things being equal, sound arguments are objectively stronger than valid, unsound arguments insofar as they have all true premises; and, for the same reason, trustworthy arguments are objectively stronger than reliable, untrustworthy arguments. It's perfectly appropriate to interpret argument strength in this manner when we're uninterested in an author's conception of her own argument.

It's also not clear that we should interpret strength as cogency whenever we *are* interested in understanding an author's perspective on her own argument. Consider abnormal arguments, for example. By definition, an abnormal author believes that her argument is cogent for certain individuals (her intentional audience), but fails to believe that it is cogent for certain other individuals participating within the argumentative exchange (either herself or her social audience). In these more complicated cases, it's not clear that cogency is the best overall measure of what such an author is most interested in achieving. So it's not clear that an abnormal author could not reasonably be dissatisfied with a cogent interpretation of her argument. It's not clear that she would necessarily want to privilege cogent over non-cogent interpretations.

Our proposal to interpret argument strength as argument cogency is therefore restricted to contexts within which our primary aim is to represent an argument as it is conceived by its author, and where we have reason to believe – either directly or through an appeal to the normality assumption – that the argument in question is normal.

We invoke the principle of charity when, in aiming to represent an argument as it is conceived by its author, we don't have enough evidence to determine decisively the identity of the argument in question. More specifically, charity is invoked when we face competing interpretations each of which is (more or less) equally well-supported by the available evidence. Charity instructs us to adopt the strongest such interpretation. By interpreting strength as cogency within the context of normal arguments, we are in effect appealing to the normal author's own preferred conception of argument strength. We are deliberately electing to represent her argument in precisely the way in which she understands that argument to be rationally compelling. So this interpretational strategy is fully consonant with our general concern with charitable and empathetic listening.

Charity, so embellished, can sometimes yield more determinate judgments and, to that extent, is a more useful principle. Recall that in

- (W) 1. Koshka is Kira's pet.
 2. Koshka is a kitten.
 3. Kittens are cute.

-
4. Kira's pet is cute.

premise (3) can be read as either (3a) "Every kitten is cute" or (3b) "Most kittens are cute." (W3a) could be a valid argument with a controversial premise that would not be rational for audience members to believe. (W3b), on the other hand, could be a reliable, cogent argument for all parties concerned. Assuming that (W) is normal, the quandary over which interpretation to adopt, as being most charitable, is now easily resolved in favor of (W3b). It's reasonable to adopt a weaker interpretation of two specific components of argument (W) – (W3b) contains a weaker third premise as well as a weaker grounding relation than (W3a) – in the interests of increasing the argument's global strength.

In this case, charity instructs us to adopt a reliable argument over a valid argument. In other cases, it could instruct us to prefer an argument with all false premises over an argument with all true premises, provided that the former argument is cogent and the latter is not, and that we have reason to believe that the argument is normal. In fact, applications of the principle of charity could now conceivably lead us

to prefer the adoption of a normal, ungrounded argument with all false and irrelevant premises, over competing sound or trustworthy, compact interpretations.

However, other things being equal, it seems reasonable, *within* the class of available normal and cogent interpretations, to allow the “objective” measures of argument strength to prevail. That is, on the assumption that an author is normal, it’s reasonable, on charitable grounds, to prefer cogent, valid arguments over cogent, invalid arguments; cogent, reliable arguments over cogent, unreliable arguments; cogent, sound arguments over cogent arguments that are merely valid; and cogent, trustworthy arguments over cogent arguments that are merely reliable. So, for example, if it were rational, for all parties concerned, to believe (3a) in (W), then charity would instruct us to prefer the cogent, valid argument (W3a) over the cogent, reliable argument (W3b). Since each reading is cogent, other things being equal, the author of (W) could not reasonably object to our selecting the objectively stronger argument.

So charity can provide us with reason to prefer certain readings, not simply within the class of normal arguments, but within even more restricted classes – for example, within the class of normal, valid arguments as well. In argument (Z) of Chapter 1, for example,

- (Z) a. Omega-time is the period of time during cardiac arrest when there is a flat EEG, i.e., no measurable brain activity.
 [2. There is frequently a period of omega-time during a cardiac arrest.]
 6. The memories of NDEs frequently come from omega-time.
-
7. There is consciousness during a flat EEG.

suppose it’s reasonable to interpret the conclusion as cautiously making merely the very weak existential claim that there has been *at least one* instance of consciousness during a flat EEG. (Without more data, van Lommel cannot plausibly quantify even the approximate frequency with which consciousness occurs during a period of omega-time.) So interpreted, (Z) is a valid argument. (Notice that, on this interpretation, it remains valid even without premise (2). So, on this interpretation, (Z) is a non-compact argument. Therefore, to simplify matters, assume, for the remainder of this section, that (Z) no

longer contains premise (2).) However, (Z) remains valid if, for (6), we substitute the weaker proposition (6a): “The memories of NDEs sometimes come from omega-time.” (6a) is weaker than (6) in the sense that it’s more likely to be true. More precisely, (6) entails (6a), but not vice versa.

Now, it’s possible that (Z) is a normal, cogent, valid argument. It’s possible, in particular, that it’s rational, for all parties concerned, to believe (6). But if so then, since (6) entails (6a), it’s almost certain that it’s rational, for all parties concerned, to believe (6a) as well. So if (Z) is cogent, (Z6a) is probably cogent as well. Suppose it is. Now, even though (Z) and (Z6a) are both cogent and valid, and even though it’s rational for all parties concerned to believe both (6) and (6a), on charitable grounds it’s preferable to adopt (Z6a) over (Z). It’s preferable, that is, to adopt the least risky valid argument. If it’s rational for us to believe a proposition, then it’s rational for us to believe that proposition to be true. But, other things being equal, (6) is less likely to be true than (6a). So, other things being equal, there’s no reason to incur the additional risk of one of the premises of a cogent, valid argument being false, when there’s a less risky premise available, the adoption of which will preserve cogency without weakening the argument’s inferential structure.

Here’s a simpler way of making the same point. (Z6a) is more likely than (Z) to be a sound argument. So, assuming they’re both normal and cogent, and given that it’s reasonable to prefer cogent, sound arguments over cogent arguments that are merely valid, it’s reasonable, on grounds of charity, to prefer (Z6a) over (Z).

EXERCISES

- 3.12 Suppose that (W3c) is the argument which results from substituting for (3) in (W) the proposition (3c) that 51 percent of all kittens are cute. Assuming that (W3b) has the properties described in the text, would it be more charitable to select (W3b) or (W3c) as the argument of a normal author? Justify your answer.
- 3.13 Would it be more charitable to select (W3c) or (W3d) as the argument of a normal author, where (3d) is the proposition that 61 percent of all kittens are cute? Justify your answer.

- 3.14 Explain how it's possible, on charitable grounds, to prefer a trustworthy argument over an untrustworthy argument. Illustrate your answer with an example.
- 3.15 Explain how it's possible, on charitable grounds, to prefer an argument with all false and altogether irrelevant premises over a sound argument. Illustrate your answer with an example.
- 3.16 Explain how it's possible, on charitable grounds, to prefer a reliable, untrustworthy argument over a trustworthy argument. Illustrate your answer with an example.
- 3.17 Explain how it's possible, on charitable grounds, to prefer one of two reliable arguments, each of which has all true premises. Illustrate your answer with an example.
- 3.18 Explain how it's possible, on charitable grounds, to prefer one of two cogent, reliable arguments, each of which has all true premises. Illustrate your answer with an example.
- 3.19 Explain how it's possible for it to be rational for some individual P to believe a proposition Q without rationally believing a proposition Q' that is entailed by Q . Illustrate your answer with an example.
- 3.20 Explain how it's possible for some individual P to rationally believe a proposition Q without rationally believing a proposition Q' that is entailed by Q . Illustrate your answer with an example.
- 3.21 Explain how it's possible for it to be rational for some individual P to believe a proposition Q without it being rational for P to believe a proposition Q' that is entailed by Q . Illustrate your answer with an example.
- 3.22 Explain how it's possible for some individual P to rationally believe a proposition Q without it being rational for P to believe a proposition Q' that is entailed by Q . Illustrate your answer with an example.

3.3 Validity

Every argument is either valid, reliable, or unreliable. We have now seen repeatedly that these properties bear only a very loose conceptual relationship to the property of argument cogency. A valid (or reliable or unreliable) argument may be either cogent or non-cogent

for a particular individual. And an argument that is cogent (or non-cogent) for a particular individual may be either valid, reliable, or unreliable.

In the following two sections, however, we'll make a number of recommendations about how you can form rational beliefs about cogency, in light of any rational beliefs you may already possess regarding the validity, reliability, or unreliability of an argument that you have constructed or encountered in some other fashion. These remarks take the form of recommendations only since, as noted earlier, we're not in a position to place any theoretical constraints on the content of an individual's rational beliefs. In particular, we can't say that if some person *P* rationally believes a proposition *Q*, and if *Q* entails a proposition *Q'*, then it must be the case that it's rational for *P* to believe *Q'*. So although, in what follows, we will be able to establish a variety of conceptual (or semantic) truths about the properties of validity, reliability, and unreliability, it may not be rational for certain individuals to believe that these truths obtain – in the sense that these beliefs may not be reflectively stable for them. So even if an individual possesses rational beliefs involving the concept of validity, for example, it doesn't necessarily follow that it's rational for her to believe that every argument with a necessarily true conclusion is valid, although that's true as a matter of definition. This entailment is perhaps too complex for her to fathom, or too counterintuitive for her to accept and settle upon even after due reflection.

Even so, most of the conceptual truths to which we will appeal are extremely basic, and will be obvious to most readers of this text. It's true by definition, for example, that every sound argument has all true premises. There is nothing puzzling or mysterious about this claim. So most people who have any rational beliefs involving the notion of soundness will also rationally believe that every sound argument has all true premises. (It might even be argued that believing this of any sound argument is a necessary condition of having any rational beliefs whatsoever about the notion of soundness, but we won't press that more controversial point here.) Furthermore, it's true of most people that if they rationally believe of an argument *A* that it is sound, and if they also rationally believe that all sound arguments have all true premises, then it will be rational for them to believe of *A* that it has all true premises. That is, this latter belief would survive

or emerge for them, after a process of ideal deliberation, as a settled conviction, i.e., as a belief in the truth of which they would be firmly confident.

Similar remarks apply to the rational beliefs that we can form about cogency on the basis of the conceptual (or semantic) relationships obtaining among the R, G, and C conditions. For example, it will be true of most people that if they rationally believe that the premise set of an argument *A* is irrelevant to *A*'s conclusion, then it will be rational for them to believe that *A* ipso facto fails the R, G, and C conditions for them.

The recommendations that follow, therefore, ought to be compelling for most (and likely for the vast majority of the) readers of this text. They can also be usefully employed to inform our judgments about the epistemic states of normal authors. The normality assumption, for example, might lead you to conclude that an author believes her argument to be cogent, for all affected parties, within a context where there is no clear indication as to *why* she believes that argument to be cogent. However, if you are able to establish (or plausibly assume) that the author in question is in the habit of forming non-eccentric rational beliefs about her own arguments – i.e., beliefs that are not radically different from the beliefs most of us would eventually endorse after careful reflection – then the following principles may reasonably be invoked to explain how her beliefs about cogency can be justified in light of her other convictions. In this way, the following principles become relevant to our (now very familiar) project of listening to authors and attempting to understand, as fully as possible, how they themselves conceive of their own argumentative proposals.

Suppose, to begin with, that you rationally believe that argument *A* is valid. (Recall that this means that you currently believe – either occurrently or dispositionally – that *A* is valid, and that this belief would survive a process of careful critical reflection.) This gives you no reason to believe that *A* is cogent, since it may not be rational for you to believe that each of *A*'s premises are true. While valid arguments are truth-preserving arguments in the sense that they are guaranteed to take you from a set of all true premises to a true conclusion, there is no guarantee that all of the premises of a valid argument are true. Therefore, it can be rational for you to believe that some of the premises

of an argument, which you rationally believe to be valid, are not true. It follows that it can be rational for you to believe that the argument's conclusion is not true as well.

However, if you rationally believe of an argument *A* that it is not only valid but also sound, then it's rational for you to believe that each of *A*'s premises are true, and that *A*'s conclusion is true as well. Valid arguments are guaranteed to take us from all true premises to a true conclusion, and sound arguments have all true premises. Therefore, it's rational for you to believe, of any argument *A* which you rationally believe to be sound, that *A* passes the T condition and that *A* has a true conclusion. Unfortunately, it's still not necessarily rational for you to believe that *A* is cogent since, for one thing, it may not be rational for you to believe that *A* is grounded.

This may sound odd, as sound arguments are valid, and validity may seem to constitute the ideal grounding relation. If the truth of an argument's premises guarantees that the argument's conclusion is true, how can those same premises, if true, fail to provide enough evidence to justify believing that the argument's conclusion is true as well? How, in other words, can a valid argument fail to be grounded? And more generally, how could it fail to be rational for you to believe, of an argument *A*, which you rationally believe to be sound, that *A* is cogent for you?

The general problem is that a valid argument can contain premises that are altogether irrelevant to that argument's conclusion. This can occur in two ways. First, the entire premise set of a valid argument can be irrelevant to that argument's conclusion. Every argument with a necessarily true conclusion, such as

(A) 1. Canada has exactly ten provinces.

2. No circle is a rectangle.

is valid. (This is one of the notorious so-called "paradoxes" of entailment.) Since (1) is true, (A) is also sound. However, (1) is also irrelevant to (2). Therefore, (A)'s premise set fails to be relevant to (A)'s conclusion, and ipso facto *A* fails to be grounded.

So not every valid (or sound) argument is grounded. Therefore, it can be rational for you to believe, of an argument that you rationally

believe to be valid (or sound), that it is not grounded. So it's possible for a valid (or sound) argument not to be cogent for someone, even though she rationally believes the argument to be valid (or sound).

Second, irrelevant premises can also occur within valid (or sound) arguments that contain premise sets that are relevant to the argument's conclusion (and that do not contain necessarily true conclusions). Valid arguments are *monotonic* in the sense that any valid argument will remain valid no matter how many extra (relevant or irrelevant) premises are added to it; and any sound argument will remain sound no matter how many extra true (relevant or irrelevant) premises are added to it. So, for example, in the sound argument

- (B)
1. Canada has a population of at least 25 million.
 2. Bhutan has a population of less than one million.
 3. Mice are mammals.
-
4. Canada's population is more than 25 times larger than Bhutan's population.

(B)'s premise set is relevant to (4), although (3) is altogether irrelevant to (4). (B) is a grounded argument as well but, since (3) plays no essential role in providing evidential support for (4), (B) is also non-compact. (Notice that (A) is also non-compact but, unlike (B), ungrounded.)

So not every valid (or sound) grounded argument is compact. Therefore, it can be rational for you to believe, of an argument you rationally believe to be both valid (or sound) and grounded, that it is not compact. So it's possible for a valid (or sound) grounded argument not to be cogent for someone, even though they rationally believe the argument to be both valid (or sound) and grounded.

Arguments such as (A) and (B) will likely appear to be silly, in that it's hard to imagine how someone could actually argue with an audience in this fashion, with the goal of rational persuasion in mind. Nonetheless, they uncontroversially illustrate important conceptual truths. And people *can* argue from altogether irrelevant premises, even if this phenomenon rarely assumes such a blatant form. But perhaps more to the point, while it's hard to imagine how two people could rationally disagree over whether, say, (1) is relevant to (2) within

(A), people frequently *do* disagree, from the perspective of their respective epistemic states, about whether and, if so, how premises that are actually employed by authors are relevant to the conclusions of those authors' arguments. Recall our discussion about slavery in Chapter 2, for example.

One problem with (A) and (B) is that, although they're sound, they're also non-compact because they both contain an irrelevant premise. Does it follow, then, that it's rational for you to believe of an argument *A*, which you rationally believe to be both sound and compact, that *A* is cogent for you? Unfortunately, no. The conclusion of

(C) 1. Eight is the sum of two primes.

2. Every even number greater than two is the sum of two primes.

expresses Goldbach's conjecture. Assume, for the sake of argument, that (2) is necessarily true. (A very likely supposition, by the way.) Therefore (C) is valid. (C) is also sound and compact, since (1) is both true and relevant to (2). But (1), by itself, does not provide nearly enough evidence to justify belief in (2). So (C) is an example of a sound, compact, ungrounded argument. Insofar as you rationally believe that (C) possesses these properties, it's rational for you to believe that (C) fails to be cogent for you.

(A) and (C) are unusual, of course, in that their validity derives from something other than the amount of relevant information contained within their premise sets. The validity of each argument is procured trivially through the presence of a necessarily true conclusion. Let's say that an argument is *anomalous* just in case it contains a necessarily true conclusion (and *non-anomalous* just in case it is not anomalous). Roughly, anomalous arguments aside, that is, it's rational for you to believe, of any argument *A* that you rationally believe to be both sound and compact, that *A* is also cogent for you. More precisely, if you rationally believe of an argument *A* that it is both sound and compact, then it's rational for you to believe that *A* is cogent for you, provided it's also rational for you to believe that *A* does not have a necessarily true conclusion. That is, if you rationally believe of an argument *A* that it is sound, compact, and non-anomalous, then it's rational for you to believe that *A* is cogent for you.

EXERCISES

- 3.23 Prove that any valid argument will remain valid no matter how many extra premises are added to it.
- 3.24 Prove that all anomalous arguments are valid.
- 3.25 Suppose that argument *A*, in support of conclusion *C*, contains a premise that is the negation of *C*. Under what conditions, if any, would *A* be valid? Justify your answer.
- 3.26 Explain why it's not possible for a compact, reliable argument to have a necessarily true conclusion.
- 3.27 Explain why it's not possible for a cogent, reliable argument to have a necessarily false premise.
- 3.28 Explain how it's possible for a cogent, valid argument to have a necessarily false premise. Illustrate your answer with an example.
- 3.29 Construct an argument containing two premises that contradict one another. Under what conditions, if any, could this argument be cogent for someone? Under what conditions, if any, could this argument be non-cogent for someone? Justify your answer.
- 3.30 Each of (A) and (C) is ungrounded. Is it possible for an anomalous argument, containing only necessarily true propositions as premises, to be grounded? If so, illustrate your answer with an example. If not, explain why not.
- 3.31 Is it possible for an anomalous argument, containing no necessarily true propositions as premises, to be grounded? If so, illustrate your answer with an example. If not, explain why not.
- 3.32 Suppose you rationally believe of an argument *A* that it is sound and compact. Suppose further that *A* is anomalous. Describe three separate conditions under which it would be rational for you to believe that *A* is cogent for you.
- 3.33 Is it possible for a sound, non-compact argument to be ungrounded while containing a premise set that is relevant to that argument's conclusion? If so, illustrate your answer with an example. If not, explain why not.
- 3.34 Is it possible for a sound, non-anomalous argument to be ungrounded? If so, illustrate your answer with an example. If not, explain why not.

3.4 Reliability

Turning next to the topic of reliability, suppose that you rationally believe that argument *A* is reliable. This gives you no reason to believe that *A* is cogent, since it may not be rational for you to believe that all of *A*'s premises are true. If *A* is reliable, then it's more likely than not that *A*'s conclusion is true, provided that each of *A*'s premises are true. But they need not be true. So it can be rational for you to believe, of an argument *A* that you rationally believe to be reliable, that not all of *A*'s premises are true. So a reliable argument need not be cogent for you. It can also be rational for you to believe, of an argument you rationally believe to be reliable, that its conclusion is false.

However, if you rationally believe that *A* is not only reliable but also trustworthy, then it's rational for you to believe both that all of *A*'s premises are true and that, therefore, *A*'s conclusion is more likely to be true than false. Does it follow that it's rational for you to believe that *A* is cogent for you? In answering this question, we'll begin with a familiar concern about the role of irrelevant premises within reliable arguments.

When discussing irrelevant premises, it's important to take note of two structural differences between valid and reliable arguments. First, there's no probabilistic analogue to the "paradoxical" result that every argument with a necessarily true conclusion is valid. Suppose that argument *A* contains a conclusion *C* that is true in, say, 99.999 percent of all possible situations, but is not a necessarily true proposition. It doesn't follow that *A* must be reliable, since *A*'s premise set may contain the proposition that is the negation of *C*. Obviously, *C* is not true in most of those situations in which the negation of *C* is true, and so *A* would not be a reliable argument in this case. Therefore, not every argument with an extremely probable conclusion is reliable.

The second structural difference worth mentioning is that, unlike valid arguments, reliable arguments are not monotonic. That is, the addition of an extra premise can transform a reliable argument into an unreliable argument. So, for example, while

- (D) 1. Exactly 99 of the marbles in the urn are made of glass.
 2. There are exactly 100 marbles in the urn.
-
3. The next marble to be drawn from the urn will be made of glass.

is a reliable argument, (D) would become unreliable with the introduction of an extra premise (4) to the effect that the glass marbles in the urn are too large to be drawn from the urn. We'll say that a set of propositions *S* *defeats* a reliable argument *A* just in case the addition of all the propositions within *S*, to the premise set of *A*, would transform *A* into an unreliable argument. So proposition (4) defeats (D).

Reliable arguments are therefore said to be *defeasible*, as they inherently run the risk of being defeated. However, in spite of defeasibility, it's still possible, of course, for a reliable argument to contain premises that are altogether irrelevant to the conclusion of that argument. Were we now to substitute "marshmallows" for "marbles" in (4), for example, the result would be a three-premise reliable argument including a premise that is altogether irrelevant to (3). Now, suppose that this new premise, along with (1) and (2), are all true. It follows that the argument under consideration is also trustworthy. However, it is also non-compact because it contains a premise that plays no role in providing evidential support for the argument's conclusion. So not all trustworthy arguments are compact. Therefore, it can be rational for you to believe, even of an argument *A* you rationally believe to be trustworthy, that *A* fails the **C** condition, and is therefore not cogent for you.

Suppose next, then, that you rationally believe that *A* is a trustworthy, compact argument. So it's rational for you to believe that *A*'s conclusion is more likely to be true than false, and that each premise within *A* plays an essential role in providing evidential support for that conclusion. Is it rational for you to believe that *A* is grounded? That is, is it rational for you to believe that the premises within *A* provide enough evidence to justify believing that *A*'s conclusion is true? Specifically, is reliability a grounding relation? It's tempting to conclude, for a couple of reasons, that the answer to each of these questions is no.

Suppose that you're about to go out on a blind date one evening and, after listening to the weather forecast, you reason as follows.

(E) 1. There's a 51 percent chance of rain this evening.

2. It will rain this evening.

Suppose further that it's rational for you to believe that (E) is a trustworthy, compact argument. It's easy to imagine how it might *not* be rational, in one important sense, for you to believe (2). For suppose

it's true that, were you to adopt the belief that it will rain this evening, you would, out of habit, bring an umbrella on the date, and as a result the evening would be a disaster, as your date, it turns out, can't stand people who bring umbrellas on blind dates.

This sad story is no reason, however, to deny that reliable arguments are grounded. What it shows is just that your life would go less well than it otherwise might have gone, were you to adopt the belief that (2) is true. So, in a prudential sense, you might be better off not believing (2). But whether your believing (2) to be true would have an adverse effect on your life has no relevance to the question of whether (2) is in fact true, or whether the evidence cited in (1) justifies you in believing (2) to be true.

Our focus in this text is on *epistemic* rationality, where it's assumed (somewhat artificially) that we are concerned *solely* with the goal of acquiring true beliefs and avoiding false beliefs, and where we are guided in this project *solely* by evidential considerations. So nothing has any bearing on whether it's (epistemically) rational for someone to believe a proposition *Q* unless it's taken by that person, on careful reflection, to constitute evidence bearing upon the truth or falsity of *Q*. For most people and most propositions *Q*, rationally believing that your adopting a belief in *Q* will ruin your date, or destroy your life, or make you ecstatic, has no bearing on whether *Q* is true or false. So these sorts of considerations, about the practical consequences of believing (2) in (E) for example, have no bearing on the claim that arguments that someone rationally believes to be trustworthy, such as (E), are indeed grounded for that person.

(E) may seem problematic for another reason, however; namely, because the 51 percent probability cited in (1) is so low that it's only ever so *slightly* more likely to be the case that (2) is true rather than false. Why, one might ask, should it be true, in general and for all people, that any body of evidence, which makes it *merely* more likely to be true than false that some proposition *Q* is true, provides *enough* evidence to justify individuals in believing *Q*? If this claim is not true – if, for example, individuals are at liberty, after due reflection, to demand that, in order to support a rational belief, a body of evidence must surpass a higher probabilistic threshold – then it could be rational for certain individuals to believe, of an argument *A* they rationally believe to be trustworthy, that *A* is not grounded.

One reason for suspecting that it may indeed be rational to demand a higher probabilistic threshold derives from the simple fact that the conclusion of a trustworthy argument may not be true. So rather than viewing a trustworthy argument as one that offers you at least a 51 percent chance of believing a true proposition, that argument can just as well be viewed as offering you as much as a 49 percent chance of believing a false proposition. In certain contexts and from certain perspectives, this can reasonably be assessed as too much of a risk. In a criminal court, for example, it's not rational (or fair) for a judge to believe, and therefore rule, that a defendant is guilty because there's a 51 percent chance that she is guilty. And it's clear from the kinds of medical quandaries that patients regularly face that attitudes toward risk can vary considerably among rational individuals choosing between alternative treatments.

It's easy to be misled, however, in drawing faulty conclusions from these sorts of cases. Suppose that you're suffering from a terminal illness for which surgery is the only available treatment. You reason as follows.

- (F) 1. Surgery, if successful, will cure me completely.
 2. There's a 51 percent chance that I will survive surgery.
-
3. I should undergo surgery.

Of course, if there's a 51 percent chance that you will survive the operation, then there's also a 49 percent chance that the operation will kill you. For many rational individuals, this may be too much of a risk. But this again has no direct bearing on issues of epistemic rationality. Notice, to begin with, that (F) contains a practical conclusion recommending a particular course of action. So, although this was not the case in (E), practical considerations do indeed have a bearing upon the cogency of (F), and accordingly they can constitute evidence in their own right for or against (3). Whether (F) is cogent for you may depend, for example, on the strength of your desire to continue living. Because for most of us this desire is very strong, we're rightly cautious about assuming a substantial risk of being killed in the near future. This in turn makes us hesitant to accept (3) as true, since whether (3) is true depends in large part upon whether surgery will most likely achieve what we most desire.

Proposition (3) presumably claims that it's best (or advisable or prudent), *all things considered*, for you to undergo surgery. Now, in determining whether (F) is cogent for you, we are interested *solely* in the epistemic question as to whether it's rational for you to believe that (3) is *true*, on the basis of the evidence cited. And while practical considerations are, as we have seen, certainly relevant to that question, because of the gravity of the situation it's not unusual for certain particularly salient practical considerations to overwhelm individuals and cloud their judgments of epistemic rationality in these sorts of cases. Someone's (rational) aversion to imminent death, for example, can lead them to ignore or downplay the significance of questions about the quality of life they would be forced to endure should they forgo surgery. If you stand a very good chance of suffering a painful and miserable death in the very near future without surgery, then surgery may begin to look like a more promising option. If, however, your terminal illness won't likely kill you or adversely affect the quality of your life for, let's say, another twenty years, surgery is perhaps (depending upon your age) a reckless gamble.

It's tempting to conclude, when first presented with an argument such as (F), that there must be a 51 percent chance that its conclusion is true, since (2) asserts that there's a 51 percent chance that you will survive surgery. It's clear, however, that this inference is unwarranted. Whether it's rational for you to view (F) as a reliable argument will depend upon features of your broader epistemic state – specifically, your desires, and your beliefs about your overall medical condition and future prospects. Given that (1) and (2) are true, we can imagine situations in which (3) is almost certainly true, as well as others in which (3) is almost certainly false. Perhaps the most that we can say, abstracting from particular epistemic states, is that, given that (1) and (2) each pulls so strongly in support of opposing recommendations, it's probably rational to suspend judgment on the argument's conclusion. That is, given that (1) and (2) are true, on balance it's probably as likely that (3) is true as that (3) is false. So (F), as an unreliable argument, has no bearing on the question of whether reliable (or trustworthy) arguments are grounded.

Suppose, however, that you have opted for surgery and that you reason as follows.

- (G) 1. I will have surgery tomorrow morning.
2. There's a 51 percent chance that I will survive surgery.
-
3. I will be alive tomorrow afternoon.

Given that (1) and (2) are true, there's a 51 percent chance that (3) is true, and so (G) is a reliable argument. So, in believing (3) to be true, you would be assuming a 49 percent chance of believing a false proposition. (Note that, to simplify matters, we're assuming that your chances of survival are not affected in any way by whether or not you believe (3) to be true.) Is it rational for you to believe (3) on the basis of (1) and (2)? Our answer is yes. In this text we'll adopt the position that since (G) is reliable, then – subject to two important contextual qualifications – (G) is grounded as well. That is, we'll say that the premises of a reliable argument, if all true, generally provide enough evidence to justify belief in that argument's conclusion. Two points can be made in defense of this recommendation.

First, it makes most sense to regard a reliable argument as grounded when your interest in acquiring true beliefs is (roughly) proportionate to your interest in avoiding false beliefs. If your only goal were to avoid false beliefs, you could accomplish this most effectively by refusing to believe anything. And if your only goal were to acquire as many true beliefs as possible, you could accomplish this most effectively by believing every proposition – or at least every proposition that you are capable of believing. Individuals with these respective goals would have no interest in the practice of argumentation, however. In this study, we're interested in a more balanced approach to the process of acquiring true beliefs and avoiding false ones, where that process is guided by evidential considerations. While ideally we want to hold only true beliefs, we're willing to appeal to evidence as a means of increasing our stock of true beliefs, even when this means running some risk of believing some false propositions. How much of a risk you should be willing to take will depend upon the relative strength of your aversion to holding false beliefs and your interest in acquiring true beliefs.

Let's suppose that your aversion to acquiring false beliefs is very much stronger than your interest in acquiring true beliefs. If this were

so, then it wouldn't be rational for you to adopt a belief in a proposition unless there is a very high likelihood that the proposition is true. A 51 percent probability, in particular, would not be nearly sufficient to justify you in adopting that belief. Why should you run a 49 percent risk of obtaining something – a false belief – to which you are highly aversive, for only a slightly better chance of obtaining something else – a true belief – that is far less important to you?

If, on the other hand, your interest in acquiring true beliefs is very much stronger than your aversion to acquiring false beliefs, then it could be rational for you to adopt a belief in a proposition that had a very slim, say, only an 11 percent chance of being true. It might be rational for you to run a very substantial risk of obtaining something that is only slightly unwelcome, for the slim chance of obtaining something that is highly desirable.

Therefore, the more averse one is to acquiring false beliefs, relative to one's interest in acquiring true beliefs, the more cautious one ought to be in taking on new beliefs. If you are highly averse to the risk of acquiring false beliefs, you would reasonably demand that a proposition must surpass a high probabilistic threshold before you are justified in accepting that proposition as true. However, should you become less risk-averse, that probabilistic threshold should drop accordingly.

Suppose, then, that you are *just as* interested in avoiding false beliefs as you are in acquiring true beliefs. That is, with whatever intensity and in whatever manner you want to acquire true beliefs, you want to avoid false beliefs with the same intensity and in the same manner. Now, since your desire for true beliefs is proportionate to your disdain for false ones, you should be *indifferent* between the options of believing and disbelieving (i.e., believing to be false) a proposition Q that you rationally believe to have a 50 percent chance of being true. If there's a 50 percent chance that Q is true, then there's also a 50 percent chance that Q is false. So believing Q gives you a 50 percent chance of obtaining something you want – a true belief – along with a 50 percent chance of obtaining something you don't want – a false belief – with exactly the same intensity and in exactly the same manner. Similarly, disbelieving Q also gives you a 50 percent chance of obtaining something you want – a true belief – along with a 50 percent chance of obtaining something you don't want – a false belief – with exactly the same intensity and

in exactly the same manner. In fact, you have no reason to believe Q , and no reason to disbelieve Q . Your only rational option is to suspend judgment on the truth value of that proposition.

Q 's taking on any probability either above or below the 50 percent threshold, however, is enough to undermine this judgment of indifference. Suppose that the probability that Q is true is greater than 50 percent. Then believing Q gives you a chance of obtaining something you want that is greater than the chance of obtaining something you don't want, with exactly the same intensity and in exactly the same manner. So in this case it's rational for you to believe Q . By parity of reasoning, it's rational for you to disbelieve Q whenever the probability that Q is true drops below 50 percent.

In other words, it's rational for anyone, whose interest in acquiring true beliefs is (roughly) proportionate to her interest in avoiding false beliefs, to gamble on the truth of the conclusion of a trustworthy argument. Therefore, we recommend to all such individuals, that if you rationally believe of an argument A that it is reliable, then it's rational for you to believe that A is grounded. Within certain contexts, mere reliability secures justifiable belief and groundedness. Similarly, if you rationally believe of an argument A that it is unreliable, then it's rational for you to believe that A is ungrounded.

Of course, neither our beliefs nor our interests are subject to direct willful manipulation. You can't acquire a certain type of interest in believing true propositions just by deciding to acquire that interest; any more than you can believe a proposition just by deciding to believe it; or any more than you can acquire a disposition to believe propositions whenever, say, they receive a certain level of probabilistic support, just by deciding to acquire that disposition. Nor should we assume that an individual's interests are invariant over time, or across all circumstances. However, it's true of many (and perhaps most) people that their interest in acquiring true beliefs is, in a very broad range of contexts, roughly proportionate to their interest in avoiding false beliefs. That is, it's very often the case that, in attempting to establish the truth value of a proposition by an appeal to evidence, you have an interest in believing that proposition if it is true, a comparable interest in not believing that proposition if it is false, and no special reason to be cautious about believing that proposition, above and beyond your standing interest in avoiding the acquisition of false

beliefs. In recommending to readers that reliability ought to be viewed as a grounding relation, we're recommending that, in all contexts of this sort, a reliable argument ought to be viewed as providing enough evidence to justify belief in its conclusion. Readers who take this recommendation to heart will likely over time develop a disposition to believe the conclusions of reliable arguments within the situations presently under consideration. If, however, an argument is offered within a context where you do have a strong (epistemic) reason to be especially cautious about accepting that argument's conclusion as true, then of course it's sensible, within that context, to depart from this general recommendation and to insist that mere reliability cannot in this case secure groundedness.

Given that reliable arguments are defeasible, our recommendation to view reliability as a grounding relation must also be understood in the context of (what's often called) *the requirement of total evidence*. Suppose that, in the reliable argument (G), (1) and (2) are true, and that it's rational for you to believe that they are true. Is it necessarily rational for you to believe (3)? Unfortunately, no. Although in isolation (1) and (2) do provide enough evidence to make it more likely than not that (3) is true, you might also rationally believe some other proposition that would undermine that evidence and defeat the inference from (1) and (2) to (3). Suppose, for example, that it's rational for you to believe that the hospital in which you will be having surgery will be destroyed in a missile attack at noon tomorrow. This does not affect the fact that (G) is a trustworthy argument, since (G) makes no mention of any such attack. However, subject to *all* the evidence at your disposal, it would not be rational for you to believe (3), although that proposition is the conclusion of a trustworthy argument. Therefore, if you rationally believe of an argument *A* that it is trustworthy, then it's rational for you to believe that the conclusion of *A* is true provided there is no set of propositions *S* such that it's rational for you to believe, both that each proposition within *S* is true, and that *S* defeats *A*. So once again, not every reliable argument is grounded.

The second point to be made in defense of our general recommendation is that beliefs admit of degrees. While you probably have great confidence in the truth of some of your beliefs, in other cases you may accept a belief to be true only with considerable hesitation.

Other things being equal, your level of confidence in the truth of a belief should be informed by evidential considerations. So, as the level of evidential support for a proposition Q increases (decreases), your level of confidence that Q is true should rise (fall) accordingly.

Therefore, in saying that, in (G) for example, it's rational for you to believe that (3) is true, given that it's rational for you to believe that (1) and (2) are true, we acknowledge – and in fact insist – that your belief in (3) ought to be weak or hesitant in nature. (And if you also happen to be less than fully confident in the truth of one or more of (G)'s premises, then of course your level of confidence in (G)'s conclusion ought to be weaker still.) While it would be rational for you to accept an (even-money) bet on proposition (3) being true, it would not be rational for you to stake a great deal on that conviction. Furthermore, your rational belief would be precarious in the sense that it wouldn't take much contrary evidence to undermine it.

In conclusion, therefore, neither all valid arguments nor all reliable arguments are grounded. More specifically, while not every sound argument is grounded, and while not every sound argument is compact, if you rationally believe of an argument A that it is sound, compact, and non-anomalous, then it's rational for you to believe that A is cogent for you. (It's also possible, in special cases, that it's rational for you to believe, of an argument A that you rationally believe to be sound, compact, and anomalous, that A is cogent for you.) And while not every trustworthy argument is compact, trustworthy arguments are grounded in a broad range of cases. Therefore, subject in particular to the requirement of total evidence, if you rationally believe of an argument A that it is both trustworthy and compact, then it's rational for you to believe that A is cogent for you.

EXERCISES

- 3.35 Explain why reliability does not constitute a grounding relation in a criminal court of law.
- 3.36 Suppose that you have a 250 batting average and that you're up to bat next. After reviewing your situation, you form the belief that you will get a hit this time at bat. In what sense, if any, is your belief rational? In what sense, if any, is it not rational? Justify your answer.

- 3.37 Describe a context within which you would have a strong non-epistemic reason for not believing the conclusion of a trustworthy argument, i.e., a reason that does not bear upon whether that proposition is true or false.
- 3.38 Describe a context within which you would have a strong epistemic reason for not believing the conclusion of a trustworthy argument, i.e., where your interest in determining whether that proposition is true or false is not well served by mere reliability.
- 3.39 Construct a one-premise reliable argument about marbles. Next, add a second premise that transforms the one-premise argument into an unreliable argument. Next, add a third premise that transforms the two-premise argument into a reliable argument. Finally, add a fourth premise that transforms the three-premise argument into an unreliable argument. Prove that your various arguments possess the requisite properties.
- 3.40 Identify a proposition that would defeat argument (E).
- 3.41 Is it possible to identify a proposition that would defeat argument (F)? If so, illustrate your answer with an example. If not, explain why not.
- 3.42 Suppose A is a reliable argument, the premise set of which contains proposition P . Does the proposition that is the negation of P defeat A ? Justify your answer.
- 3.43 Choose one reliable argument discussed in this chapter and identify a proposition that, if added to the premise set of that argument, would make the argument less reliable without defeating it. Justify your answer.
- 3.44 Explain how it's possible for an argument to be defeated by a set of propositions S , without being defeated by any single member of S . Illustrate your answer with an example.
- 3.45 Consider the following argument (A): (1) There are exactly 17 orange pumpkins in the well. (2) There are exactly 30 pumpkins in the well. Therefore, (3) the next pumpkin to be drawn from the well will be orange.
 - a. Identify a proposition P that defeats (A).
 - b. Identify a pair of propositions P and Q such that the set $\{P, Q\}$ defeats (A), but neither P nor Q on its own defeats (A).
 - c. Identify a proposition P that, if added to the premise set of (A), would transform (A) into a valid argument.

- d. Does the proposition P , identified in your solution to exercise (c), defeat (A)?
- 3.46 Suppose that there is a true proposition P that, if added to the premise set of a reliable argument A , would make A less reliable without defeating it. Under what conditions, if any, could it be rational for you to believe, both that A is cogent for you, and that the less reliable argument containing premise P is not cogent for you? If this is possible, illustrate your answer with an example. If it's not possible, explain why not.
- 3.47 Suppose that you rationally believe that argument A is trustworthy. Suppose further that there is a true proposition P that defeats A . Under what conditions, if any, could it be rational for you to believe the conclusion of A ? If this is possible, illustrate your answer with an example. If it's not possible, explain why not.
- 3.48 Construct a non-compact, trustworthy argument A , where no premise within A 's premise set is altogether irrelevant to A 's conclusion. Justify your answer.
- 3.49 Construct a compact, trustworthy argument A in support of a conclusion C where, all things considered, it would be rational for most of your compatriots to believe that A is compact and trustworthy, but not rational for them to believe C .
- 3.50 Construct a non-compact, reliable argument A that is defeated by a single proposition P , where the removal of a single premise from A would result in a compact, reliable argument A' that is not defeated by P . Prove that your arguments possess the properties in question.
- 3.51 Suppose that argument A is reliable. Is it possible for A to contain a premise set that is irrelevant to A 's conclusion? If so, explain how and illustrate your answer with an example. If not, explain why not.

3.5 Methodological Matters

Throughout the first three chapters of this text, we have employed a wide variety of technical terms in discussing the behavior of arguers, and in particular in describing arguments as they are conceived by their authors. In Chapter 1, we talked about authors employing

propositions as either premises or conclusions, we distinguished those propositional claims from static and noise, we distinguished embryonic from enthymematic arguments, and intentional from social audiences. In Chapter 2, we introduced the concept of cogency to pick out, in a context-sensitive manner, those arguments which ought to succeed in realizing an author's aim of rational persuasion; and we then analyzed that generic concept in terms of the more specific conditions of truth, relevance, groundedness, and compactness. Finally, in Chapter 3, we attributed to normal authors certain beliefs regarding the cogency of their own arguments, and we explored how an individual's beliefs about cogency ought to be affected by her beliefs about truth, relevance, validity, soundness, reliability, trustworthiness, and compactness.

We have in effect, therefore, adopted a specialized logical vocabulary to *represent*, in as accurate, precise, and perspicuous a manner as possible, the macrostructure of arguments and the epistemic states of individuals engaged in the practice of argumentation. That is, we have employed various more or less arcane philosophical concepts in an attempt to enhance our capacity to describe accurately what authors and audience members take themselves to be doing when engaged in the practice of rational persuasion. We have *not*, however, assumed that those individuals themselves necessarily consciously employ the concepts that we have employed in representing their behavior.

To be sure, a certain conceptual sophistication is required of any individual who is capable of either presenting or responding to an argument. At the same time, few arguers make regular use of such terms as "premise," "validity," "reliability," "trustworthy," "grounded," "compact," or "cogent," and so on, and few arguers would understand questions posed to them, about their own argumentative practices, that were framed in those terms. It does not follow, however, that, as theoreticians, we cannot or should not ourselves employ these terms in arriving at a coherent and insightful accurate description of the epistemic states of those very arguers and their social practice of argumentation.

We won't argue here at length about the psychological capabilities an individual must possess in order for her to be able to participate in the practice of argumentation. However, if an individual has some grasp of the notion of evidence, and if she can differentiate between

one claim being offered as evidence and another claim being supported by that evidence, and if she can differentiate between one bit of evidence being strong enough to justify belief in one claim but not relevant to justifying belief in some other claim, then it seems reasonable to describe the individual in question as being capable of employing propositions as premises and conclusions, and of making grounding claims – regardless of whether she herself ever conceives of her own activities in terms of “premises,” “conclusions,” and “grounding relations.”

It is, of course, a contingent question what any particular individual is in fact capable of. But evidence of the relevant sort can often be garnered by imagining how she would respond to appropriately framed questions. Anyone who understands that, if Kira believes both that Koshka is a kitten and that all kittens are cute, then she is justified in believing that Koshka is cute, but is not thereby justified in believing that whales are vegetarians, has at least some rudimentary grasp of the concept of an argument, is capable of participating in the practice of argumentation, and conceives of her own arguments in some more or less sophisticated fashion, which we can represent by employing the notions of premises, conclusions, and grounding relations.

Similar comments apply to each of the other technical terms we have employed. Anyone who understands that, if Lucy believes both that most Libras are likable and that Lily is a Libra, then she is justified in believing that Lily is likable, even though she thereby runs some risk of being mistaken, has at least some rudimentary grasp of the difference between valid and reliable arguments. Anyone who possesses the ability to spot irrelevant premises within an argument, and who understands how an argument can contain more information than is needed for the purposes of rational persuasion, has at least some rudimentary grasp of the concept of a compact argument. And anyone who can experience frustration over the fact that her interlocutor obstinately refuses to adopt a belief in the face of compelling evidence, has at least some rudimentary grasp of the concept of argument cogency, and is able to differentiate between (what she takes to be) rational as opposed to irrational argumentative behavior.

It is important to recognize, however, that we have tacitly been operating with two quite distinct concepts of cogency throughout this text. On the one hand, we’ve employed a generic conception of cogency

according to which an argument *A* is cogent for you just in case you ought to be persuaded to adopt *A*'s conclusion on the basis of the evidence cited within *A*'s premise set. And we've also stipulated that someone cannot be the author of an argument unless she believes that that argument is cogent (for someone) in precisely this sense. Beyond this, we've also attempted to explicate this generic conception of cogency in terms of the more specific TRGC conditions.

It is not plausible, however, to claim that an individual cannot be the author of an argument unless she believes that that argument satisfies all four TRGC conditions. There are different ways of reasonably fleshing out the generic conception of cogency, and our proposal of understanding cogency specifically in terms of the TRGC conditions may reasonably be challenged on any number of grounds. An author is someone who endorses a particular argument. As noted earlier, she serves as that argument's advocate. Clearly, someone can believe that a certain audience ought to be persuaded by a particular argument without believing that that argument satisfies the TRGC conditions for that audience. So while an author must believe, of some audience, that they ought to be persuaded by her argument, she may be in possession of no other, more fine-grained conception of cogency, or she may operate with a more specific conception of cogency distinct from the one that we have proposed. Therefore, it's not plausible to claim that an individual cannot be the author of an "argument" *A* just because, for example, she believes that *A* is not compact. In her judgment, compactness may not be a condition of cogency.

Acknowledging a generic sense as well as a number of more specific possible articulations of the concept of cogency allows for greater flexibility in implementing our project of describing arguments as they are conceived by their authors. While we'll insist that the author of any argument must believe that the members of her intentional audience ought to be persuaded by that argument, we'll allow for the possibility that different authors may have different conceptions of the specific conditions under which an individual ought to be persuaded by an argument. Not everyone operates with the specific fine-grained conception of cogency that we have proposed. This does not mean that they cannot be the authors of arguments.

Nor does it mean that these individuals cannot be the authors of normal arguments. Throughout section 3.1, wherein we defined the

notions of a normal argument and a normal author, deliberately no reference was made to the TRGC conditions. Rather, a normal author was defined as someone who believes that her argument is cogent for herself as well as for all members of her social audience, where believing that an argument *A* is cogent for a person *P* amounted to no more than believing that *P* ought to be persuaded by *A*. So if an author operates with no other, more fine-grained conception of the conditions under which an individual ought to be persuaded by an argument, this does not preclude her from being a normal author. To say that an author is normal is just to say something about the *scope* of her beliefs about the cogency of her own argument. To say that an author is normal is to say nothing about the *content* of her beliefs about cogency, beyond the generic claim that a cogent argument is one by which certain individuals ought to be persuaded.

Of course, given our interest in describing arguments as they are conceived by their authors, we also have an interest in understanding, as fully as possible, how any author – normal or otherwise – conceives of a cogent argument. In fact, this normative consideration matters vitally to our (predominantly) descriptive project. Since, by definition, an author takes herself to be offering a good argument – i.e., an argument by which a certain audience ought to be persuaded – she must take herself to be making claims that conform to certain normative standards – namely, those standards that capture her own conception of argument cogency. Therefore, to understand fully how an author conceives of a good argument would be enormously helpful in determining what that author takes herself to be doing in presenting that argument. With that knowledge in hand, we would be able to restrict our proposed descriptive interpretations to those which she herself understands to constitute cogent arguments.

Unfortunately, we're almost never in possession of direct evidence regarding how an author conceives of a good argument. Only very rarely, that is, do authors explicitly engage in abstract discussions concerning the conditions of cogent argumentation, in the course of advancing a particular argument. Typically, the most we can do is make educated guesses about an author's specific conception of cogency, based on indirect evidence having to do with the properties that, we discover, we are able to attribute (confidently and regularly) to her arguments. Obviously, that indirect evidential base is seriously

restricted in those not uncommon situations where we have access to but a single argument by a particular author.

One can't make much progress, however, in describing arguments as they are conceived by their authors, without relying upon *some* fairly robust, fine-grained conception of argument cogency. Because authors aim at presenting (what they take to be) good arguments, we can't reasonably interpret argumentative behavior without having some fairly determinate sense of what constitutes a good argument. Since authors themselves rarely supply this, we'll assume, as a reasonable working hypothesis, that unless there is direct evidence available to the contrary, authors understand cogency in terms of the TRGC conditions. Call this *the thick cogency assumption*. (Our conception of cogency is "thicker" or more layered than most in that it consists of a total of four separate conditions, each one of which is satisfied, not when a given argument possesses a certain property, but when it's rational for an individual to believe that that argument possesses that property.) Attentive readers will now recognize that this assumption has in fact already been in effect since our discussion of argument (W) in section 3.2.

Although the thick cogency assumption can be applied to normal and abnormal authors alike, in this text we're interested mainly in normal arguments. Suppose, then, that *P* is a normal author – an interpretation that may be supported either on the basis of direct evidence or by invoking the normality assumption. In this context, the thick cogency assumption allows us to attribute to *P* the specific beliefs that it's rational for her (as well as the members of her social audience) to believe that the premises of her argument are all true, that those premises ground her conclusion, and that her argument is compact. As explained in Section 3.2, the principle of charity now further licences us to prefer, as accurate descriptions of the argument that *P* takes herself to be offering, interpretations that are cogent according to the TRGC conditions over interpretations that are not cogent according to those conditions.

Like the normality assumption, the thick cogency assumption is defeasible. We should not (straightforwardly) attribute to an author a belief that her argument satisfies the TRGC conditions if, for example, she makes remarks that are in tension with that belief. (At that point, in deciding which beliefs, if any, we may confidently attribute to

the author, we must make a more difficult determination as to which interpretation the evidence, on balance, best supports.) And like any principle of interpretation, including again the normality assumption, the thick cogency assumption may lead to error. By invoking this assumption, we may attribute to authors beliefs they do not hold. The methodological decision to assume that, other things being equal, authors operate with a thick conception of cogency must, therefore, be appraised in light of its consequences. Readers will have to judge for themselves whether the adoption of the thick cogency assumption tends to generate fair, reasonable, and interesting interpretations of argumentative passages and, if so, whether that benefit outweighs the risk of misrepresenting how those passages are in fact conceived by their authors.

The consequences of adopting the thick cogency assumption are far from insignificant. This assumption tends to privilege certain interpretations of particular argumentative passages over others. It also helps to promote a culture of respectful listening within argumentative discourse. Consider, for example, the compactness condition, the consequences of which will become increasingly significant throughout the coming chapters. As noted previously, to assume that an author is normal is to assume that she understands herself to stand in a relation of epistemic solidarity with her audience. A normal author believes that she shares certain evidential commitments with her audience and that, as a result of that commonality, she and her audience are in a position to share a further conviction in the truth of some conclusion. The normality assumption, by encouraging us to respect and take seriously the author's perspective on an argument, encourages us to listen carefully to others as a means toward better understanding ourselves.

If, however, we assume that a normal author believes, not only that her argument is cogent in the generic sense, but also that it's rational for herself and others to believe that her argument is compact, then we have further reason to listen to normal arguments with a particular concern and level of respect for *how* those arguments are presented. If a normal author believes that her argument is compact, then she believes that each premise within that argument plays an essential role in providing her audience with evidential support for that argument's conclusion. It follows, in particular, that she believes that no premise within her argument is altogether irrelevant to that

argument's conclusion. If, as audience members, we take seriously the possibility of learning from others, then, so long as the thick cogency assumption is in effect, we should never immediately dismiss *any* of a normal author's premises as absurd or irrelevant. If we're convinced that a normal author has employed a certain proposition as a premise, then we ought to investigate how that proposition (possibly in conjunction with other propositions) provides evidence (possibly in conjunction with other evidence) that is thought, by the argument's author, to give us reason to alter our own epistemic state. Roughly, then, the normality assumption and the thick cogency assumption together encourage us to consider carefully *everything* an author has to say, and they discourage us from ignoring any individual argumentative components that, initially, make no sense, or that make us feel angry, defensive, or uncomfortable. Together these assumptions encourage us to listen with an open mind and to exercise patience, so that we make a fair and deliberate effort to understand precisely what an author has to say, before passing judgment.

Recall, in closing, that in attributing to a normal author certain beliefs concerning, say, the compactness or groundedness of her argument, we're not assuming that any of those beliefs are true. Nor are we assuming that she consciously employs these terms, or that she understands and is operating with a sophisticated battery of argumentatively relevant concepts, or that she is an especially skilled or astute arguer. Many (normal) authors possess shoddy argumentative skills, and operate with fuzzy, confused, or downright incoherent conceptions of their own argumentative behavior. As noted earlier, it's ultimately an empirical question whether a particular arguer conceives, or is capable of conceiving, of her own argument as possessing such and such a property. But this in itself doesn't speak against the viability of a research project that describes a social practice in terms that may be (more or less) foreign to the practitioners themselves. In listening carefully to arguers, sometimes we may profitably perceive what they literally cannot say.

EXERCISES

- 3.52 Explain the difference between the normality assumption and the thick cogency assumption. Describe one context within

which it would be appropriate to make the first but not the second assumption, and another context within which it would be appropriate to make the second but not the first assumption.

- 3.53 Suppose Norma is the author of argument *A*. What can you infer about Norma's epistemic state, on the assumption that she is normal? Be as specific as possible.
- 3.54 Repeat exercise 3.53, this time invoking the thick cogency assumption as well.
- 3.55 Suppose that, after carefully studying an argument *A*, you conclude that *A* is not compact. What further conclusion(s) might you plausibly draw about *A*, or its author, on the basis of this evidence? Justify your answer(s) and identify any background assumptions upon which you are relying.
- 3.56 In this text we have analyzed the generic conception of argument cogency by invoking both (a) the TRGC conditions of thick cogency and (b) an analysis of rational belief in terms of reflective stability. Compose an approximately ten-page (double-spaced) argumentative essay in which you first critically challenge at least one of (a) or (b), and then propose an alternative conception of the conditions under which an individual ought to be persuaded to adopt the conclusion of an argument, on the basis of the evidence cited.

PART TWO

MICROSTRUCTURE

Convergence

4.1 Diagrams

The canonical form of an argument describes that argument as it is conceived by its author, insofar as it identifies the propositions the argument's author has employed in constructing an evidential case in support of some claim. By identifying an argument's propositional components – its premise(s) and conclusion – a canonical form delineates that argument's macrostructure. Canonical forms, however, provide no information about an author's conception of how the premises of her argument are relevant to, or how they ground, her conclusion. The specific evidential relations that obtain between an argument's propositional parts constitute that argument's *microstructure*. So canonical forms are silent on microstructural matters. In the following three chapters, we'll develop a method of argument diagramming that will allow us to display graphically both the macrostructure and the microstructure of arguments as those arguments are conceived by their authors.

We'll begin with five brief methodological comments about the general practice of argument diagramming. First, this practice is an extension of our overriding concern, in this text, with listening to authors. For our purposes, an argument diagram is, first and foremost, a visual description of the structure of an argument as it is conceived by its author. To be sure, one can construct diagrams of one's own arguments, either to explain to others or to clarify in one's own mind

the microstructure of those arguments. And familiarity with the technique of argument diagramming should enhance your appreciation of the structural options open to you in arguing for any conclusion of your own choosing. However, here we'll concentrate our efforts on the intriguing task of deciphering the arguments of others.

Second, the transition from canonical forms to diagrams is motivated by the greater expressive capacity of diagrams. The diagrams that we will develop convey information about arguments that cannot be expressed in a canonical form. At the same time, diagrams are parasitic upon canonical forms in the sense that you cannot begin to diagram an argument until you have identified its macrostructure. So a diagram at least implicitly conveys all the information about an argument that is expressed by that argument's canonical form, and more.

Third, we'll adhere to the principle of introducing a distinct symbol into our diagramming apparatus only if that symbol is clearly and unambiguously defined, i.e., only if it's clear what specific claim that symbol is making about the structure of the argument being diagrammed. Therefore, there should never be any doubt or controversy as to what an argument diagram is saying about the structure of some argument; or, more precisely, about what view concerning the structure of that argument is being attributed, through the diagram, to the argument's author. The conceptual content of an argument diagram should always be apparent and unequivocal.

Fourth, insofar as argument diagramming is a hermeneutical exercise, we should be prepared for the possibility of rational disagreement, not over what some diagram *D* says about the structure of some argument *A*, but about whether *D* is in fact an accurate description of the author's conception of the structure of *A*. The task of interpreting an argument's microstructure is in principle no less challenging than that of interpreting its macrostructure. Therefore, in describing the structure of particular arguments through the use of diagrams – i.e., in *applying* our conceptual tools – we can expect to encounter doubts and controversy, both within ourselves and in our discussions with others. Nonetheless, these interpretational doubts and disagreements will be better understood, and perhaps more effectively resolved, so long as we retain clarity about the expressive content of our argument diagrams.

Finally, for the reasons articulated earlier, we'll continue to adopt both the normality assumption and the thick cogency assumption throughout the following three chapters. That is, provided we have no evidence of abnormality, we'll assume that the authors of the arguments under consideration believe those arguments to be cogent for themselves, for the members of their social audience, and (by definition) for the members of their intentional audience. A normal author, that is, believes her argument to be cogent for all affected parties. Therefore, a diagram that depicts the structure of an argument from the perspective of its normal author simultaneously captures how that author conceives of her own argument and how she believes others – specifically, those targeted by her argument – ought to view it as well.

Furthermore, provided again that we have no evidence to the contrary, we'll also assume that the authors of the arguments under consideration understand cogency specifically in terms of the TRGC conditions. With respect to microstructural matters and the practice of argument diagramming, the adoption of this assumption means, most significantly, that we'll assume that authors believe their arguments to be both compact and grounded. The diagram of a normal argument *A* will therefore record authorial beliefs about how *A*'s premise set grounds *A*'s conclusion, and how each premise within that set plays an essential role in providing evidential support for that conclusion.

Since the normality assumption and the thick cogency assumption will usually operate together in what follows, we can simplify our prose considerably by adopting the following convention. Unless noted otherwise, whenever we invoke the normality assumption or assume that an author is normal, we should be understood as assuming both that that author is normal and that she understands cogency in terms of the TRGC conditions.

4.2 Convergent Arguments

From a structural point of view, the simplest arguments are those with a single premise and (by definition) a single conclusion. Consider, for example,

- (A) (1) Today is Ash Wednesday. Therefore, (2) tomorrow is Thursday.

By numbering the propositions within this passage, and by recognizing that (1) is the argument's premise and that (2) is its conclusion, we have in effect already identified the macrostructure of (A). So in this simple case we can move directly to the task of diagramming the argument expressed in passage (A) without going to the trouble of literally constructing or actually writing out its canonical form. Nonetheless, no argument can be diagrammed unless its canonical form has been identified in some fashion. Furthermore, every diagram needs to function in tandem with some particular canonical form in order to convey information about the semantic content of an argument's premise(s) and conclusion. Since canonical forms identify an argument's propositional components by number depending upon their location within a particular argumentative passage, and since those numbers are incorporated within argument diagrams to represent premises and conclusions, it follows that argument diagrams convey information about the sequence within which an argument's premise(s) and conclusion are expressed within a particular argumentative passage. It also follows that argument diagrams are relativized to particular argumentative passages in the same way that canonical forms are. An argument diagram is a representation of (an author's conception of) the structure of a particular argument as expressed within a particular argumentative passage. Therefore different diagrams, like different canonical forms, can exhibit different presentations of one and the same argument.

The purpose of diagramming an argument is to arrive at a graphic representation of the evidential relations that are claimed, by the argument's author, to obtain among its propositional components. On the assumption that (A) is a normal and non-enthymematic single-premise argument, the author of (A) must believe that (1) is true, that (1) grounds and is therefore relevant to (2), and that therefore (2) is true as well. Accordingly, we'll diagram this argument as follows.

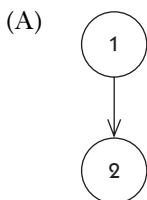


Diagram (A) is composed of four distinct symbols: two numbered circles or nodes, a downward pointing line or arrow, and a downward pointing arrowhead, i.e., the “v” symbol appearing at the lower tip of the arrow and immediately above the lower circle. Each of these symbols is *discrete* in the sense that it cannot sensibly be dismantled. That is, no proper part of any of these symbols (for example, an unnumbered circle) has any semantic or representational content, and therefore no such part can ever be used to express any claim about an argument.

The two nodes correspond to the two propositions identified by number within passage (A). The top node, circling the number one, represents the first proposition expressed in (A). The bottom node, circling the number two, represents the second proposition expressed in (A). By convention, premises always appear above conclusions within argument diagrams. The downward-pointing arrow running between the two circles represents the binary relation of favorable propositional relevance. The downward-pointing arrowhead represents a grounding claim – the drawing of an inference – and is to be read as “therefore.” By convention, arrows and arrowheads always point or “flow” downward; arrows may emerge only from numbered premises; an arrow must connect one or more numbered premises to a numbered conclusion; and each arrow must eventually terminate in an arrowhead, which itself must never appear anywhere but immediately above a numbered conclusion. In other words, conclusions are identified diagrammatically as those numbered circles which appear immediately below an arrowhead. Since every argument involves the drawing of an inference in support of a single conclusion, every diagram of a single argument contains exactly one arrowhead.

Diagram (A), therefore, attributes to the author of argument (A) the following four beliefs: that proposition (1) (qua premise) is true; that (1) is relevant to (2); that (1) grounds (2); and that therefore proposition (2) (qua conclusion) is true. So each separate symbol within the argument’s diagram attributes to the argument’s author a separate belief. Drawing these points together, diagram (A) attributes to that author the conviction that the truth of (1) provides enough evidence on its own to justify belief in the truth of (2). That argument (A) is (believed by its author to be) compact is expressed diagrammatically, not by any distinct symbol, but by the fact that each numbered

premise within the diagram is connected by an arrow to the argument's conclusion.

Notice that each of these attributions can be read directly off the diagram, once our diagrammatic conventions have been understood. Specifically, the normality assumption plays no role whatsoever in determining which beliefs are being attributed to the argument's author by the diagram. These attributions follow from the structure of the diagram itself. The normality assumption is invoked to justify the claim that these attributions are reasonable. The normality assumption, that is, helps to explain why diagram (A) makes sense as an interpretation of passage (A). Notice further that, in diagramming (A) in this manner, we are not assuming, through either our diagramming conventions or our adoption of the normality assumption, that any of the beliefs so attributed to the author of (A) are *true*. The diagram depicts nothing more than the author's conception of what she takes herself to be doing in composing passage (A).

Argument diagrams are centrally concerned with displaying relevance relations, and some of our diagrammatic conventions are motivated by our conception of relevance as a binary relation obtaining between propositions. As discussed earlier in Chapter 2, a set of propositions *S* is *relevant* to a proposition *Q* just in case, were the propositions within *S* all true, taken together they would provide evidence in favor of the truth of *Q*. Unfortunately, it's notoriously difficult to arrive at a comprehensive and informative analysis of what it means for a set of propositions to "provide evidence in favor of" the truth of some proposition. However, it's relatively uncontroversial to offer something like the following probabilistic account as capturing at least a sufficient condition of favorable propositional relevance.

Suppose that, in your current epistemic state, you're able to assign a certain antecedent probability *n* to the proposition *Q*: *n* is the number, within the interval [1,0], which represents, relative to everything else you already believe, your assessment of the probability that *Q* is true. Suppose you now come to believe that proposition *P* is true. We'll say that, relative to your epistemic state, *P* is relevant to *Q* if the probability that you now assign to *Q*'s being true, given that *P* is true, is greater than *n*. In other words, *P* is relevant to *Q* if *P*'s being true would, in your judgment, make it more likely that *Q* is true. Stated even more succinctly, *P* is *relevant* to *Q* if $prob(Q/P) > prob(Q)$. And in general terms,

where S is a set of propositions, S is *relevant* to Q if $\text{prob}(Q/S) > \text{prob}(Q)$, i.e. if the probability you would assign to Q 's being true, given that each member within S is true, is greater than the antecedent probability you would assign to Q .

Clearly, this probabilistic rendering of relevance is subjective in a variety of ways. The requisite probability values are assigned to propositions relative to an individual's epistemic state, and these assignments are not subject to any rationality constraints. (Similar points apply to an author's belief that her premises are true, or that they ground her conclusion.) Nonetheless, this probabilistic test, when it applies, captures well what someone ordinarily *means* when they *claim* that one proposition is relevant to another proposition. So the test is useful when it comes to representing an author's beliefs about the structure of her own argument, and we can of course employ this test in diagramming someone else's argument without ourselves necessarily assenting to (each or any of) her judgments of propositional relevance.

The test's intuitive plausibility can perhaps be better appreciated by returning to argument (A) and considering a concrete example. Suppose you've forgotten what day it is but you're sure it's a weekday. Then, for you, the probability that proposition (2) within (A) is true is one-fifth. Were you now to assume that (1) is true, that probability would increase to one. Therefore, for you, in this context, (1) is relevant to (2).

This simple application of the probabilistic test of relevance to argument (A) also highlights another important feature of our understanding of the propositional relevance relation. In adopting diagram (A), and in claiming that proposition (1) is independently relevant to proposition (2), we are *not* claiming that this relevance relation obtains in a vacuum, or in isolation from an understanding of and commitment to a vast network of other propositions. In judging that there's an antecedent probability of one-fifth that today is Thursday, for example, you are assuming that there are exactly five weekdays in a week, and that your failing memory has no bearing on what day of the week it is. In judging that there's a probability of one that tomorrow is Thursday, given that today is Ash Wednesday, you're assuming that Thursdays immediately follow Wednesdays and that Ash Wednesdays occur on Wednesdays. An individual's judgments of propositional relevance are made within the context of that individual's background

beliefs. Someone who is unaware of Western conventions for marking the passage of time might not believe that (1) is relevant to (2) within (A).

Therefore, an individual's belief that a relevance relation obtains between, say, a premise and a conclusion is typically dependent upon her (tacit) commitment to many other propositions. Few if any arguments are free of this kind of dependence, though we're often blind to this feature when, as in (A), the background beliefs upon which a relevance relation depends are so basic and so widely shared that we rarely have occasion to reflect upon them. Most of us would appreciate immediately the relevance of (1) to (2) within (A). In argument (B), by contrast,

- (B) (1) Today is Ash Wednesday. Therefore, (2) tomorrow is the second day of Lent.

the recognition of the relevance of (1) to (2) would be less immediate for many people, since within many communities the fact that Ash Wednesday is the first day of Lent is not common knowledge. Still, for most of us it's not difficult, upon just a little reflection, to ascertain that the author's claim that (1) is relevant to (2) within (B) depends upon the truth of this proposition. Sometimes, however, an author's relevance claim will presuppose highly specialized and esoteric background knowledge. In (C), for example,

- (C) (1) Arithmetic is incomplete. Therefore, (2) minds are not machines.

no one would likely appreciate the relevance of (1) to (2) without having extensive prior knowledge of recent developments within mathematical logic and the philosophy of mind.

We'll say that the arguments expressed within passages (A), (B), and (C) have *presuppositions* insofar as their respective relevance and grounding claims depend upon unexpressed background propositions that do not themselves appear within the macrostructure of those arguments. It's important to be clear, however, about what this dependency relation does and does not consist in. In particular, dependency is not strictly a semantic relation, although an (unhealthy) preoccupation with valid arguments might lead one to think so. Valid arguments are sometimes characterized as always being valid solely in virtue of the

meanings of words. So, for example, anyone who fully understands the meanings of the propositions expressed in

- (D) (1) Only dinosaurs are dangerous. Therefore, (2) no dragonfly is dangerous.

ipso facto understands (D) to be a valid argument. Therefore, you don't have to believe anything further, beyond having a full understanding of propositions (1) and (2), in order to believe that (1) is relevant to (2). So judgments concerning the existence of a relevance relation between two propositions can occur in isolation, so long as those propositions are fully understood. Similarly, on the assumption that it's true by definition that, for example, Ash Wednesdays occur on Wednesdays, it doesn't require anything beyond a full understanding of propositions (1) and (2) within (A) to appreciate, in isolation, that a relevance relation obtains between them.

To talk about a "full understanding" of a proposition, however, is really just a surreptitious way of referring to a whole constellation of relevant beliefs, even if those beliefs concern only definitional matters. And for our purposes, the content of the beliefs within this constellation does not matter. In claiming that an argument has a set of presuppositions, we mean simply that there exists a set of unexpressed propositions that do not appear either within the argument's premise set or as the conclusion of that argument, that the argument's author believes, that underlie her (probabilistic) judgments of relevance, and that she would therefore readily invoke to justify her claim that her premise set is relevant to, and in fact grounds, her conclusion, should that claim be challenged. The truth of some of these presuppositions may follow by definition from the truth of the propositions that do appear within the argument's macrostructure. And many presuppositions are themselves true by definition. But these particular semantic relations need not always obtain. Presuppositions sometimes concern matters of fact, as in the single-premise argument

- (E) (1) Today is Ash Wednesday. Therefore, (2) you better get used to eating fish for a while.

The important point about presuppositions is just that an author typically has, ready at hand, a substantial body of further relevant information bearing upon her argument, which, for any number of

reasons, does not appear within the premises or the conclusion of that argument.

It is usually pragmatic concerns – specifically, what the author believes about the beliefs of her audience – that determine whether some proposition ends up as a premise rather than a presupposition. Authors rarely attempt to include more than a small fraction of their background beliefs as explicitly asserted premises, within their arguments. Sometimes they're not occurrently aware of many of these propositions. In other cases, including these propositions within an argument as explicitly asserted premises, would interfere with the author's goal of achieving rational persuasion. Most individuals already believe, with a great deal of confidence, that Thursdays follow Wednesdays and that Ash Wednesdays occur on Wednesdays. So they're not likely to challenge these propositions, and explicitly asserting them as premises in argument (A) would only distract an audience from focusing on the more salient item of information that today is Ash Wednesday. It's relatively uncontroversial, then, to claim that authors frequently fail to assert, as explicit premises in their arguments, all the propositions upon which their relevance and grounding claims depend.

In assuming that (A) is a non-enthymematic single-premise argument, however, we're making a stronger claim. We're assuming that no such background propositions appear in the argument even as implicitly asserted – tacit or unexpressed – premises. Vigorous debates rage within argumentation theory over how to identify the “missing” propositional components of enthymematic arguments. Anyone who wants to defend the claim that passage (A) expresses an enthymeme has her work cut out for her. She needs to explain how an author can “employ” a proposition as a premise without explicitly asserting that proposition. And since an argument even as simple as (A) relies upon a large number of background propositions, she also needs to find a way of non-arbitrarily including some of these propositions as premises and excluding others, or of defending the (implausible?) claim that all such background propositions are employed by the argument's author as implicit premises.

These questions are important, but we will not enter seriously into this thorny debate in this text. In Chapter 1 we frequently construed arguments as enthymemes (without tackling the questions

posed above), and in the [next chapter](#) we'll begin to diagram arguments of this type. Therefore, we certainly allow for the possibility that arguments may include "unexpressed" components, and that the unexpressed background propositions, upon which an argument's relevance and grounding claims depend, may function as premises within arguments. At the same time, in interpreting passages (A) and (E) as expressing non-enthymematic single-premise arguments, we also allow for the possibility that sometimes *none* of these background propositions are employed by an argument's author as (tacit) premises. But we have no grand theory to offer by way of identifying the macrostructure of enthymemes, or for determining whether an unexpressed proposition does or does not function within an argument as a premise.

Argument diagrams, as noted earlier, are parasitic upon canonical forms. That is, before one can propose a diagram of an argument's microstructure one must first identify its macrostructure. Therefore, any problems encountered in identifying an argument's premise(s) or conclusion will naturally transfer to the task of diagramming that argument. If one is unsure about the identity of an argument's premise set, one will have corresponding doubts about the accuracy of any proposed diagram of that argument. The practice of argument diagramming cannot (and is not designed to) eliminate this kind of uncertainty, although it may assist us in better understanding our options and in making more intelligent choices. What matters is that there is clarity in what we're saying about an argument, and its author, when we diagram it in any particular way.

The accuracy of our diagram of the argument expressed within passage (A) might appropriately be challenged by others. But it's clear which beliefs that diagram attributes to the argument's author. Our probabilistic test of relevance also makes it clear what we take that author to be saying in claiming that proposition (1) is relevant to proposition (2) within (A). And that test, insofar as it highlights the dependency of an individual's relevance judgments upon other beliefs within her epistemic state, also helps to explain why it's often so difficult to identify precisely the evidential base of even structurally very simple arguments. So our probabilistic test of relevance, rather than artificially disposing of real hermeneutical challenges, provides us with a useful way of framing difficult interpretational questions, and of

constructively confronting any differences of opinion that might arise in addressing them.

Unfortunately, this test does not provide a necessary condition of propositional relevance, in part because it's not always possible for an individual to assign credible probability values to propositions between which, she believes, a relevance relation obtains. The probabilistic relevance test requires that, in order for some individual to determine whether, say, proposition P is relevant to proposition Q , she must compare the conditional probability $\text{prob}(Q/P)$ that she would assign to Q on the assumption that P is true (relative to everything else she already believes) with the antecedent probability $\text{prob}(Q)$ that she would assign to Q (relative to everything else she already believes). Notice that an individual can sometimes make this comparative judgment even if she's not in a position to assign precise numerical values to one or both of $\text{prob}(Q/P)$ or $\text{prob}(Q)$. So it's important not to exaggerate this difficulty. The real problem has to do with the fact that an individual can believe that P is relevant to Q without having any idea whether, for her, $\text{prob}(Q/P) > \text{prob}(Q)$. In cases such as this, where the probabilistic test of relevance does not apply, we'll be forced to rely upon our (typically strong) intuitions about relevance and, if available, our pretheoretic justifications of those intuitions.

It's possible for premises to be relevant to other premises within the same argument, and indeed for conclusions to be relevant to their own premises as well. But since argument diagrams are designed specifically to exhibit the manner in which (sets of) premises are relevant to conclusions, diagrammatic arrows always flow downward from premises to conclusions, and never horizontally between premises or upward from conclusions to premises. This is not because such relations cannot exist, but solely because, for the purposes of argument diagramming, we're not interested in those relations.

With this understanding of the propositional relevance relation in hand, we're now in a position to define the first of the three main structural types of arguments that will be studied in this text. We'll begin by saying that a premise P within an argument A is *independently relevant* to A 's conclusion C just in case P is relevant to C independently of any other propositions within A 's premise set (but not necessarily independently of all other propositions whatsoever). Next, we'll define an argument A as being *convergent* just in case (i) the premise set S of A is relevant to A 's conclusion C , and (ii) each premise within S is

independently relevant to *C*. If a premise within an argument is independently relevant to that argument's conclusion, we'll also say that that premise is a *convergent* premise, and that it *converges* on the argument's conclusion. Therefore, a convergent argument can be defined equivalently as an argument, with a relevant premise set, in which each of its premises converges on its conclusion. (A), therefore, is a single-premise convergent argument in which (1) converges on (2).

EXERCISES

- 4.1 Diagram the following argumentative passage: "I'm so excited! Tomorrow must be Thursday since today is Ash Wednesday."
- 4.2 Suppose that one and the same argument is expressed somewhat differently in two separate argumentative passages (A) and (B). How, if at all, could the diagrams of the arguments expressed within passages (A) and (B) differ?
- 4.3 Under what conditions, if any, might an individual believe that a proposition *P* is relevant to itself? Justify your answer in terms of our probabilistic relevance test.
- 4.4 Under what conditions, if any, might an individual believe that a proposition *P* is not relevant to itself? Justify your answer in terms of our probabilistic relevance test.
- 4.5 Suppose you believe that a proposition *P* is necessarily false. Under what conditions, if any, might you believe that *P* is relevant to some other proposition *Q*? Justify your answer in terms of our probabilistic relevance test.
- 4.6 Suppose you believe that a proposition *P* is necessarily true. Under what conditions, if any, might you believe that some other proposition *Q* is relevant to *P*? Justify your answer in terms of our probabilistic relevance test.
- 4.7 Is it possible for a presupposition of an enthymematic argument to occur as an unexpressed premise within that argument? If so, illustrate your answer with an example. If not, explain why not.
- 4.8 Identify four presuppositions of argument (E).
- 4.9 Is it possible to construct a one-premise convergent argument where the relevance relation obtaining between the argument's premise and its conclusion is not dependent upon *any* presuppositions? If so, illustrate your answer with an example. If not, explain why not.

- 4.10 Is it possible that a one-premise convergent argument could be unreliable? If so, illustrate your answer with an example. If not, explain why not.
- 4.11 Is it possible that a one-premise argument could fail to be convergent? If so, illustrate your answer with an example. If not, explain why not.
- 4.12 Is it possible that a normal author of a one-premise argument could fail to believe that her argument is convergent? If so, illustrate your answer with an example. If not, explain why not.
- 4.13 Construct a convergent argument, with exactly two premises P and Q , where P is relevant to Q and Q is relevant to P . Justify your answer.
- 4.14 Construct a two-premise convergent argument A where A 's conclusion is relevant to each premise within A 's premise set. Justify your answer.
- 4.15 Explain why the conclusion of an argument A cannot be *independently relevant* to any of A 's premises, as that term is defined in this text.
- 4.16 Identify two propositions P and Q such that you believe that $\text{prob}(Q/P) > \text{prob}(Q)$ even though you can't assign credible numerical values to either $\text{prob}(Q/P)$ or $\text{prob}(Q)$. Justify your answer.
- 4.17 Identify two propositions P and Q such that you believe that P is relevant to Q even though you can't determine whether $\text{prob}(Q/P) > \text{prob}(Q)$. Justify your answer.

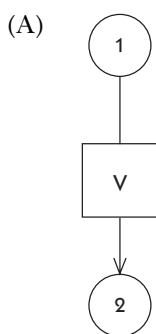
4.3 Modal Diagrams and Pooled Premises

Despite their structural simplicity, convergent arguments can assume a surprising variety of forms. Three variations are worth mentioning. First, different convergent arguments can make different grounding claims. Compare (A), for example, with argument (F) about someone's next roll of a fair die.

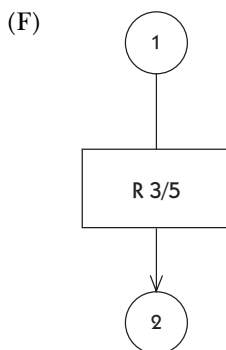
- (F) (1) I won't roll a 1 next time. Therefore, (2) I'll next roll an even number.

(A) is a valid, and (F) is a reliable argument. Yet each is convergent. Through the use of another kind of symbol – first employed by James Freeman in his 1988 textbook, *Thinking Logically* – we can graphically

capture differences in how authors conceive of the grounding relations within their arguments. A *modality*, we'll say, is a square or rectangular symbol, enclosing either an upper-case "V" or an upper-case "R," which interrupts the flow of a relevance arrow somewhere above and in the vicinity of the arrowhead to which that arrow is connected. The idea here is that the modality specifies the strength of the grounding claim represented by the arrowhead, where the strength of that claim is itself determined by the amount of relevant support flowing into the arrowhead. Modalities are also discrete symbols in the sense articulated earlier. We can imagine, in a diagram containing a modality, that a relevance arrow continues to connect a premise to a conclusion by flowing around the perimeter of that modality. It's not permitted, however, for the flow of a relevance arrow to be similarly interrupted by a numbered circle. These circles may occur only at either the beginning or the end point of a relevance arrow. Employing a modality, we can embellish diagram (A) as follows



so that it now attributes to the author of argument (A) a further belief to the effect that the inference from (1) to (2) constitutes a valid argument. Similarly, the following diagram



attributes to the author of passage (F) the belief that the inference from (1) to (2) within her argument constitutes a reliable argument. The number following the R-modality is optional and is not, strictly speaking, part of the modality symbol. This number indicates the strength of the reliable inference expressed in passage (F). So diagram (F) attributes to the author of that passage the belief that there is specifically a three-fifths probability that her conclusion is true on the assumption that each of her premises are true. Numbers of this sort are optional within modalities, since often they cannot be calculated or reasonably attributed to authors.

The beliefs attributed to authors through the use of modalities may of course be either true or false – as may the beliefs attributed to authors concerning the truth or relevance of their premises, or the presence of a grounding relation within their argument. As discussed in Chapter 1, belief attributions of this sort must be informed by the evidence at hand and, when appropriate, by the principle of charity.

Modalities are optional within argument diagrams. An argument diagram must contain at least two numbered circles, an arrowhead, and at least one relevance arrow since, in order to present an argument, one must commit oneself to at least one premise, a conclusion, and a grounding claim based upon relevance relations. A diagram without, say, a symbolic representation of a conclusion or a grounding claim would not be the diagram *of an argument*. However, it's possible for someone to present a bona fide argument while believing that her premises justify belief in her conclusion, without having any clear sense, beyond this, as to *how* that conclusion is justified by her premises. To the extent that there is no fact of the matter as to the precise nature of her grounding claim, this individual has presented an embryonic argument – an argument the identity of which is somewhat indeterminate. Clearly, it would be a mistake to include a modality in our diagram of this individual's argument, since the presence of any such modality would attribute to the author a belief that she does not possess.

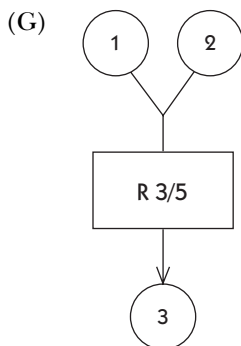
A modality should not appear in your diagram of an argument unless you are reasonably confident in attributing to the author of that argument a belief to the effect that the argument is valid, or that it is reliable. Sometimes argumentative passages will contain evidence of beliefs of this nature, but frequently they will not. This need not

block the use of modalities, however. Often it's reasonable to attribute reasonable beliefs to authors. So, for example, if an argument is obviously valid, it may be reasonable to attribute to the author of that argument a belief in its validity, even if there is no direct linguistic evidence of her possessing this belief. Sometimes we're justified in taking a hermeneutical risk and including a modality in our diagram, in the interests of producing a more interesting and informative representation of the structure of that argument as conceived by its author. We'll refer to any diagram that includes at least one modality as a *modal* diagram.

Convergent arguments can differ from one another in a second major respect. A convergent argument may contain any finite number of premises, so long as each premise converges on the argument's conclusion. Consider the following argument about someone's next turn on a fair spinning wheel divided into 100 numbered pie-shaped sections of equal area.

- (G) (1) I won't spin a number less than 26 next time. (2) I won't spin a number between 25 and 51 next time. Therefore, (3) I'll next spin a number greater than 70.

(G), like (F), is a reliable argument. (In fact, they're reliable to exactly the same degree.) (G), however, offers two items of independently relevant information in support of (3). Therefore, our diagram of (G) should reflect the fact that this argument contains two propositions that, although each is independently relevant to the argument's conclusion, work together in supporting a single inference to that conclusion. We'll accomplish this by "pooling" the evidence as follows.

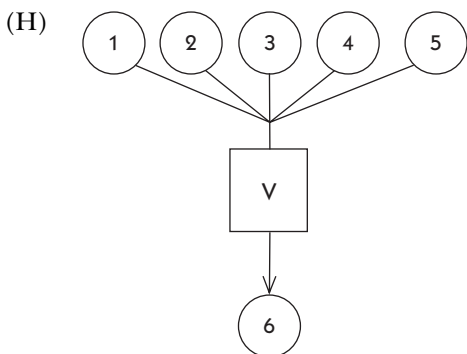


(G) is a convergent argument because each premise is relevant to (3) independently of any other premise, as indicated by the two separate relevance arrows emanating from each of (1) and (2). However, neither premise, on its own, grounds (3). Therefore, the total evidence for (3) is pooled, as is indicated by the merging of the two arrows, before any inference to (3) is drawn. The argument's modality appears below the point where the two relevance arrows intersect, and above the arrowhead, since the modality indicates the strength of the grounding claim, which itself is determined by the amount of evidential support provided by the pooling of the independently relevant information contained within the argument's two premises.

Convergent arguments with more than one premise can also be valid, of course. In

- (H) (1) I won't roll a 1 next time. (2) I won't roll a 2 next time. (3) I won't roll a 3 next time. (4) I won't roll a 4 next time. (5) I won't roll a 5 next time. Therefore, (6) I'll next roll a 6.

five convergent premises are pooled to support a single valid inference about someone's next roll of a fair die. Our diagram of this argument



attributes to the author of (H) the following beliefs: that each of the argument's five premises are true; that each is independently relevant to the argument's conclusion; that the evidence independently provided by each of the premises, once pooled, guarantees the truth of the argument's conclusion; and that therefore the argument's conclusion is true as well. To avoid needless visual complexity, when more than two convergent premises are pooled in support of a single conclusion,

we'll insist that each of the affected relevance arrows intersect at a single point.

In describing the structure of arguments and their associated diagrams, it will prove useful to adopt a distinction, couched within the language of rationality, that mirrors the distinction between relevance and grounding relations. If a set of premises *S* (but no proper subset of *S*) is relevant to a conclusion, then we can also say that *S* provides *a reason* in support of that conclusion. Therefore, the number of reasons offered in support of the conclusion of a convergent argument always equals the number of premises within that argument, since each premise within a convergent argument is independently relevant to that argument's conclusion. However, not every reason is put forward, by an argument's author, as *a reason to believe* the argument's conclusion. A set of premises provides a reason to believe a conclusion just in case that set grounds that conclusion. Since each argument, by definition, makes only one grounding claim, each argument, and therefore each convergent argument, offers only one reason to believe its conclusion.

Alternatively, if it seems too confusing to operate with these two different kinds of reasons, one can also speak, equivalently, of an *n*-premise convergent argument as being an argument that appeals to *n* separate *bits of evidence* in providing a (single) reason to believe its conclusion.

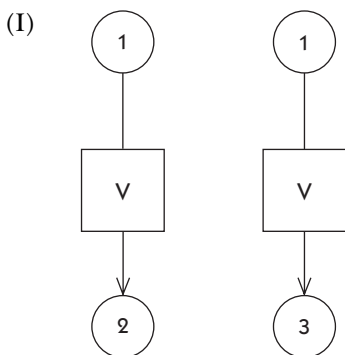
So (A) and (F), as one-premise convergent arguments, each offers one reason (bit of evidence) in support of, and also one reason to believe, their respective conclusions. (G), on the other hand, offers two reasons (bits of evidence) in support of (3). However, if our diagram of that argument is accurate, then the author of (G) is claiming that these two reasons (bits of evidence) should first be pooled before any inference is drawn. In (G), therefore, (1) and (2) are proposed as together – rather than separately – providing a reason to believe (3). So in (G) two reasons (bits of evidence) are pooled to produce one reason to believe (3). In (H), five reasons (bits of evidence) are pooled to produce one reason to believe that argument's conclusion.

Finally, different convergent arguments can share propositional parts. So even a very short argumentative passage can sometimes express a number of overlapping convergent arguments. Three kinds of cases are worth highlighting here.

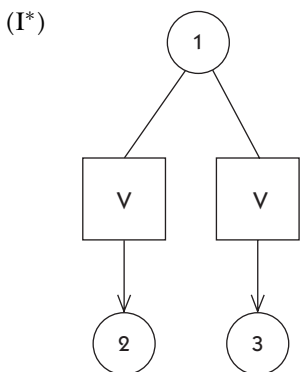
First, an author can use one and the same premise in arguing in support of two separate conclusions. In (I), for example,

- (I) (1) Today is Ash Wednesday. Therefore, (2) tomorrow is Thursday and (3) yesterday was Shrove Tuesday.

(1) provides a reason in support of (2) as well as a reason to believe (2); and (1) also provides a reason in support of (3) as well as a reason to believe (3). Passage (I), therefore, in effect expresses two separate convergent arguments and can be diagrammed as follows, using two distinct sequences of symbols that do not connect with one another.



However, since it's more elegant, we'll also allow



as a stylistic variant of (I). Notice that our diagramming conventions do not preclude the possibility of two or more relevance arrows emanating from a single node, nor the occurrence of multiple modalities or multiple arrowheads within a single connected symbolic array. The presence of two arrowheads within (I*), however, indicates clearly that (I*) is a diagram of two separate (convergent) arguments. That premise

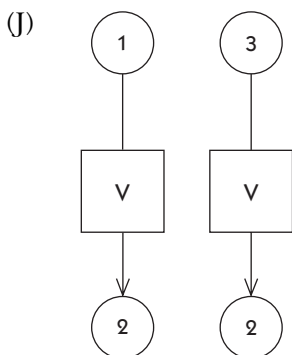
(1) is employed twice by the author of passage (I) is captured diagrammatically in (I^*) by the fact that two relevance arrows emerge from that node.

We'll individuate diagrams by saying that a single diagram is constituted by any set of symbols that are connected to one another by relevance arrows. Therefore, (I) contains two diagrams, and (I^*) contains a single diagram depicting two separate arguments. The premises of an argument can be identified diagrammatically by first identifying the argument's conclusion as (one of) the node(s) appearing immediately below an arrowhead, and then tracing each relevance arrow, which intersects with that arrowhead, upward to the immediately preceding node(s). So in (I^*) , for example, the argument depicted on the left side of the diagram has a single premise, which offers a single reason in support of proposition (2).

Second, an author can employ different premise sets in constructing two or more convergent arguments in support of the same conclusion. In (J), for example,

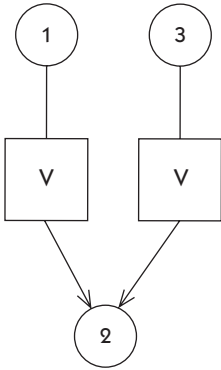
(J) I think that (1) yesterday was Sunday. So (2) today must be Monday. Besides, I'm pretty sure that (3) tomorrow is Shrove Tuesday.

(1) provides a reason in support of (2) as well as a reason to believe (2); and (3) also provides a reason in support of (2) as well as a reason to believe (2). In fact, each inference is valid. Therefore, on the assumption that the author of passage (J) understands this, to represent (J) as a single valid, non-compact argument with two pooled premises would violate the normality assumption. It's best, therefore, to view passage (J) as expressing two separate convergent arguments, which we can diagram as follows.



However, since it's more elegant, we'll also allow

(J*)



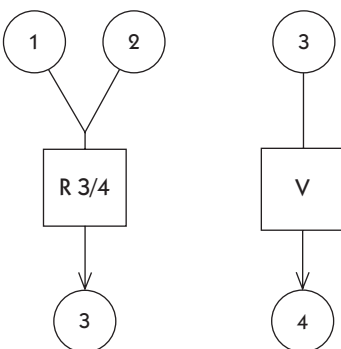
as a stylistic variant of the two diagrams within (J). That proposition (2) serves as the conclusion of two separate convergent arguments is marked clearly within (J*) by the fact that its numbered circle appears immediately below two separate arrowheads.

Third, propositions within a single argumentative passage sometimes perform yet a further dual function, serving both as the conclusion of one argument and as a premise within another argument. In (K), for example,

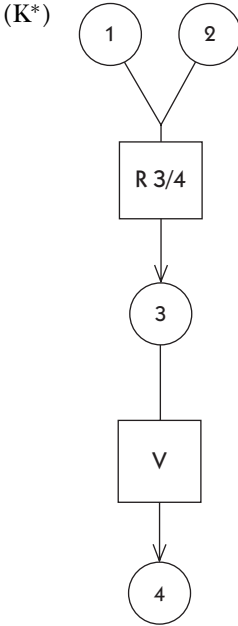
(K) (1) I won't roll a 6 next time. (2) I won't roll a 4 next time. Therefore, (3) I'll next roll an odd number. So (4) I won't roll a 2 next time.

(3) serves as the conclusion of one convergent argument reliably supported by the pooling of information in (1) and (2), and also as the sole premise of a valid convergent argument in support of (4), the main conclusion of the passage. Hence the two diagrams.

(K)



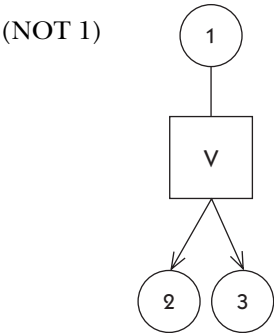
However, since it's more elegant, we'll also allow



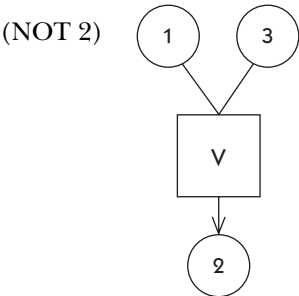
as a stylistic variant of the two diagrams in (K). Once again, the presence of two arrowheads within (K*) indicates clearly that this is a single diagram of two separate convergent arguments. We'll sometimes allow ourselves to speak loosely, however, in referring to any "argument" of this sort, where at least one proposition serves simultaneously as both a premise and a conclusion, as a *serial* argument. That proposition (3) is employed twice by the author of passage (K) is captured diagrammatically by the fact that its numbered circle occurs both at the terminal point of one relevance arrow (i.e., immediately below an arrowhead) and at the beginning of another arrow.

Proposition (1) plays two roles within passage (I), proposition (2) plays two roles within passage (J), proposition (3) plays two roles within passage (K), and we've allowed ourselves to economize on the construction of argument diagrams by fusing two *nodes* into one, within each of diagrams (I*), (J*), and (K*). We need to resist the temptation to economize further, however, by disallowing the fusing of *modalities*

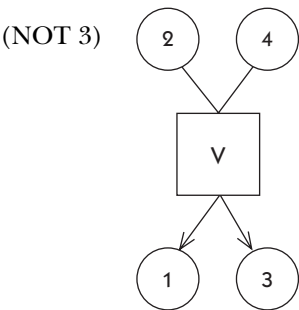
in an attempt to further reduce diagram (I*) to



or diagram (J*) to



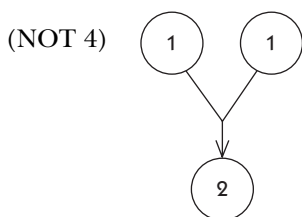
This practice, if carried to its logical conclusion, could lead to such ambiguous diagrams as



where, since the premises are not pooled, it's not clear which premise validly supports which conclusion. To block this sort of ambiguity, we'll stipulate that no more than one relevance arrow may ever intersect (i.e., enter or emerge from) any single modality. And although we

allow relevance arrows to merge in the space above a modality, relevance arrows may never merge in the space between a modality and an arrowhead.

Diagrams (I^{*}), (J^{*}), and (K^{*}) all depict more than one argument, and each diagram contains a single node that plays a separate role within two separate arguments. We'll also allow for the possibility that a single proposition may serve more than one function within a *single* argument (although we won't encounter any examples of this phenomenon until the [next chapter](#)). However, if a proposition serves only a single function within a certain argument, then we'll insist that that proposition may not be represented by more than a single node within any diagram of that argument. In other words, anything like



is disallowed, as it erroneously suggests that two reasons have been offered in support of proposition (2), when in fact the role of proposition (1) has merely, redundantly, been depicted twice.

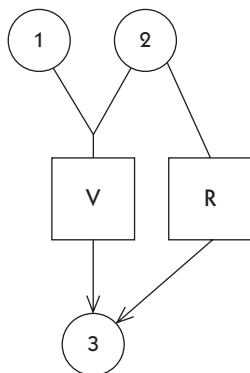
Finally, diagram (I^{*}) depicts two relevance arrows emanating from a single node, connecting with two separate conclusions. It's also possible for a single proposition to support the *same* conclusion, in different ways, within separate arguments. It's possible, for example, that the following passage about someone's next roll of a fair die

- (L) (1) I won't roll a 1 next time. (2) I won't roll a prime number next time. Therefore (3) I'll next roll a number greater than 3.

conveys two separate arguments: one being a valid argument from two pooled premises, and the other being a reliable argument from (2) to (3). On the assumption that the author of (L) is indeed offering two separate arguments, we can economically represent her conception of

this argumentative passage by the following single diagram

(L)



It's clear, from our conventions, how many premises are offered by each argument within diagram (L) in support of (3). If, however, it's more reasonable to interpret passage (L) as conveying just a single valid argument, then that argument can be represented by that analogue to diagram (G) which contains a V- rather than an R-modality.

EXERCISES

- 4.18 How many arguments are depicted within diagram (J*)? For each argument so depicted, how many reasons are offered in support of that argument's conclusion?
- 4.19 Repeat exercise 4.18 with respect to diagrams (K*) and (L).
- 4.20 Roll a fair die once to obtain a number n . Construct in canonical form and diagram an n -premise valid, convergent argument about one of your favorite movies.
- 4.21 Roll a fair die once to obtain a number n . Construct in canonical form and diagram an n -premise reliable, convergent argument about some country south of the Tropic of Capricorn.
- 4.22 Roll a fair die once to obtain a number n . Construct in canonical form and diagram n convergent arguments where the conclusion of each argument follows validly from the same single premise.
- 4.23 Repeat exercise 4.22, this time where the conclusion of each of the n arguments follows reliably from the same single premise.

- 4.24 Roll a fair die until you obtain an even number n . Construct in canonical form and diagram n convergent arguments, where the conclusion of each argument is grounded by the same single premise, and where half of the arguments are valid, and half are reliable.
- 4.25 Construct in canonical form and diagram a serial argument about one of your favorite breakfast cereals.
- 4.26 Describe in outline the macrostructure of a 365-premise valid, convergent argument. (In this and the following two exercises, find a way of describing the content of each premise without actually writing them all down.)
- 4.27 Describe in outline the macrostructure of a 30-premise reliable, convergent argument.
- 4.28 Describe in outline the macrostructure of a serial argument containing 1,000 separate grounding claims.
- 4.29 Suppose an argument diagram contains n arrowheads. How many arguments are depicted within that diagram?
- 4.30 Suppose the diagram of a single convergent argument contains n nodes. How many reasons (bits of evidence) are offered in support of that argument's conclusion?
- 4.31 Suppose an argument diagram contains n modalities. How many arrowheads must that diagram contain?
- 4.32 Suppose an argument diagram contains n arrowheads. How many modalities must that diagram contain?
- 4.33 Explain the rationale for not permitting multiple occurrences of a single node (i.e., a node bearing the same number) within a diagram of a single convergent argument.
- 4.34 Explain why neither premise within argument (G) grounds proposition (3) on its own.
- 4.35 Construct a three-premise reliable, convergent argument A about someone's next turn on a fair spinning wheel, where exactly one (but no more than one) of A 's premises reliably grounds A 's conclusion. Construct a modal diagram of this argument.
- 4.36 Repeat exercise 4.35, with the exception that no premise within A reliably grounds A 's conclusion.
- 4.37 Construct a three-premise valid, compact and convergent argument A about someone's next roll of a fair die, where exactly

- one (but no more than one) of *A*'s premises reliably grounds *A*'s conclusion. Construct a modal diagram of this argument.
- 4.38 Repeat exercise 4.37, with the exception that no premise within *A* reliably grounds *A*'s conclusion.
- 4.39 Suppose we had said that a set of premises *S* provides a *reason* in support of some conclusion just in case *S* is relevant to that conclusion. (Suppose, that is, that our definition of reasons made no reference to proper subsets.) Then how many reasons would be provided in support of proposition (6) within argument (H)?
- 4.40 Consider propositions (2) and (3) of argument (I), outside of the context of that argument. In your judgment, is (2) either a reason in support of or a reason to believe (3)? Is (3) either a reason in support of or a reason to believe (2)? Justify your answers.
- 4.41 Describe one set of conditions under which the author of passage (L) might want to employ this passage with the intention of conveying two separate arguments.
- 4.42 Construct three modal diagrams to explain how passage (L) might be represented as conveying three separate grounded (non-enthymematic) arguments in support of proposition (3).
- 4.43 Suppose that each premise within an argument diagram is connected by an arrow to the argument's conclusion. Explain why any such diagram only *imperfectly* expresses a normal author's conviction that her argument is compact.
- 4.44 Diagram the following normal convergent arguments. Employ modalities to the extent that you feel confident doing so. Identify any noteworthy presuppositions of the arguments, and justify each diagram. Is the argument that you have depicted cogent for you? Explain why. Assume that each argument passes the T condition for you, and assume in each case that you know nothing about Max aside from what's stated in the argument's premise(s). Consider each argument separately.
- (a) (1) Max has big ears. Therefore, (2) Max has a low I.Q.
 - (b) (1) Max is a Canadian citizen. Therefore, (2) Max lives in Ontario.
 - (c) (1) Max is a Canadian citizen. Therefore, (2) Max knows how to skate.

- (d) (1) Max is Mohawk. Therefore, (2) Max is a Canadian citizen.
- (e) (1) Max was born in Malawi. Therefore, (2) Max now lives in Malawi.
- (f) (1) Max is thinking of an English word with no vowels. Therefore, (2) Max is thinking of the word “psst.”
- (g) (1) The English name of the positive integer that Max is thinking of contains an occurrence of the letter *a*. Therefore, (2) Max is thinking of a number greater than 999.
- (h) (1) Max is a mammal. (2) Max can fly. Therefore, (3) Max is a bat.
- (i) (1) Max is a swan. (2) Max has an orange bill. Therefore, (3) Max is a mute swan.
- (j) (1) Max comes from a planet in our solar system. (2) Max comes from a planet that spins on its own axis in a direction opposite to the spin of Earth. Therefore, (3) Max comes from Venus.
- (k) (1) Max lives in Prince Edward Island. (2) Max’s favorite author is Lucy Maude Montgomery. Therefore, (3) Max has visited Green Gables.
- (l) (1) Max was born in a Canadian provincial capital west of Moosonee. (2) Max was born in a Canadian provincial capital whose English name contains no occurrences of any of the letters contained in “Max.” Therefore, (3) Max was born in a Canadian prairie province.

4.45 On the assumption that each of the following passages expresses at least one normal convergent argument, identify the macrostructure and construct a diagram of that argument. Employ modalities to the extent that you feel confident in doing so. Identify any noteworthy presuppositions of the arguments in question, and justify your diagrams as you see fit.

- (a) “Hence a young man is not a proper hearer of lectures on political science; for he is inexperienced in the actions that occur in life.” – Aristotle, *Nicomachean Ethics*
- (b) “But, I insist, rationality is not impossible, because human beings are for the most part rational.” – John Pollock, *Cognitive Carpentry*

- (c) “When you’ve done a murder, you never know what may come back to haunt you later on. It’s the best reason I know not to do it.” – Stephen King, *Dolores Claiborne*
- (d) “If Pluto were discovered today, no one would even consider calling it a planet because it’s clearly a Kuiper belt object.” – Michael Brown, cited in *The Hamilton Spectator*, October 13, 2002
- (e) “[N]obody should owe money, because owing money leads to lies.” – William Butler, *The Butterfly Revolution*
- (f) “‘Atticus, you must be wrong.’ . . . ‘How’s that?’ ‘Well, most folks seem to think . . . you’re wrong.’” – Harper Lee, *To Kill a Mockingbird*
- (g) Passage (G) from Chapter 1.
- (h) “His rubbers are muddy. His raincoat is wet. [Therefore] he has been walking in the rain.” – Monroe Beardsley, *Practical Logic*. (As a historical note, this is the first argument ever to be described in print as being “convergent.”)
- (i) “He was on the wrong side of the road. He had no lights. He went through a red light. Therefore, he was breaking the law.” – An example from Frans van Eemeren and Rob Grootendorst, *Speech Acts in Argumentative Discussions*
- (j) “The style is defective. The dialogues sound artificial. The plot contains no surprises. Little is left to the imagination. Therefore, this book has no literary qualities.” – An example from Frans van Eemeren and Rob Grootendorst, *Speech Acts in Argumentative Discussions*
- (k) “This one marble is red. This other marble is red. Therefore, neither marble is black.” – An example from Doug Walton, *Argument Structure*
- (l) “You have made *two mistakes*. You didn’t stop for the pedestrian on the zebra crossing, and you did not look in your mirror before stopping for the traffic light.” – An example from Francisca Snoeck Henkemans, *Analysing Complex Argumentation*
- (m) “Hans is multilingual. He speaks Dutch, his English is fluent and he knows some French.” – An example from Francisca Snoeck Henkemans, *Analysing Complex Argumentation*

- (n) "For, of course, it [SETI] had always been futile, wrong-headed. . . . There should have been no need to seek out whispers; if we weren't alone, the sky should, metaphorically, have been blazing with light." – Stephen Baxter, *Manifold: Space*
- (o) "The amount of time people spend watching television is astonishing. On average, individuals in the industrialized world devote three hours a day to the pursuit. . . . At this rate, someone who lives to 75 would spend nine years in front of the tube." – Robert Kubey and Mihaly Csikszentmihalyi, *Scientific American*, February 2002
- (p) "Human motivation cannot be documented, at least not with any kind of finality. After all, we rarely understand our own motivations, and so, even when we write down what we honestly believe to be our reasons for making the choices we make, our explanation is likely to be wrong or partly wrong or at least incomplete." – Orson Scott Card, *Shadow of the Hegemon*
- (q) "In the last month, fraud accusations surfaced in an incident that led to the removal of the two heaviest elements from the periodic table. So if you didn't know the names of elements 116 (ununhexium) or 118 (ununoctium), don't worry, because they don't exist." – *The Hamilton Spectator*, August 19, 2002
- (r) "La Petite Coloumb has the best chef in town. The live entertainment there is outstanding. The menu is also quite varied. Thus we should go there for dinner." – An example from James Freeman, *Thinking Logically*
- (s) "Alice's psychoanalyst could not help her with her problem, because she dislikes talking about such things and so she did not tell him about it." – An example from James Freeman, *Thinking Logically*
- (t) "The Wheel of Fortune is ubiquitous in medieval art and architecture. It appears in the form of a rose window in Gothic cathedrals, as a mechanical wheel in Fecamp monastery in Normandy, as a floor design in Siena cathedral and as a motif in illuminated manuscripts." – Klaus

Reichhold and Bernhard Graf, *Paintings that Changed the World*

- (u) “The far side of the moon is an ideal place for telescopes because of its absence of atmosphere and its utterly dark nights, free of reflected sun and radio transmissions from Earth.” – *Scientific American*, December 2002
- (v) “Ottawa is a lucky place because it’s built where three rivers meet, and you are a lucky boy because you’re one of a family of three.” – Elizabeth Hay, *A Student of Weather*
- (w) “As for me, I believe I am an upright man: I am loyal to my friends, I do not lie, except when I make a declaration of love, I love knowledge, and they say I write good verses. So the ladies consider me charming.” – Umberto Eco, *The Island of the Day Before*
- (x) “Only 5 percent of Iowans believed they would end up in hell. But 31 percent of the people of Iowa said they knew at least one person who was going to hell. If that were true, at least 620,000 people could be expected to go from Iowa to hell after death.” – David Chidester, *Patterns of Transcendence*

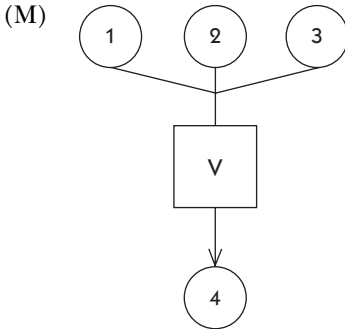
4.4 Charitable Choices

It should always be clear exactly which beliefs an argument diagram attributes to that argument’s author. However, since convergent arguments can make different grounding claims, since convergent premises can be pooled, and since even very brief argumentative passages can contain multiple convergent arguments, often we face difficult choices when engaged in the task of constructing an accurate diagram of the structure of some argument as conceived by its author. In these situations, it’s helpful to be able to appeal to some interpretational guidelines.

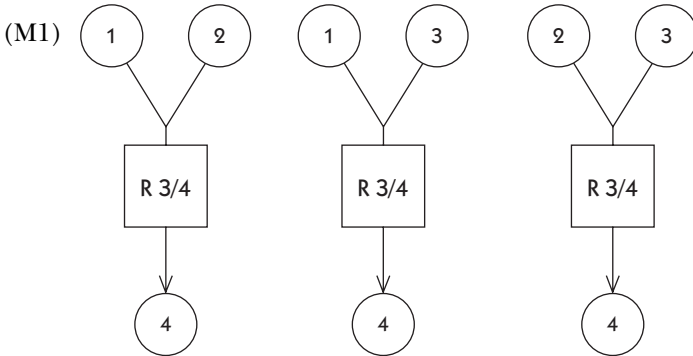
Consider, for example, yet another argument about someone’s next roll of a fair die

- (M) (1) I won’t roll a 1 next time. (2) I won’t roll a 3 next time. (3) I won’t roll a 5 next time. Therefore, (4) I’ll next roll an even number.

which we can plausibly diagram as follows



as the argument's three convergent premises together validly ground (4). Diagram (M), however, disguises the fact that a combination of any two premises within this argument also reliably grounds (4). How, therefore, can we justify diagram (M) over the set of diagrams



as being a more accurate description of the structure of passage (M) as conceived by its author? Suppose that this individual rationally believes that each premise within passage (M) is true, and that she also rationally believes, at least dispositionally if not occurrently, that the evidential relations displayed within each of these various diagrams do indeed obtain between the propositions expressed within passage (M). Why, therefore, should we assert that the author of passage (M) intends to convey only one valid (convergent) argument rather than, say, three reliable (convergent) arguments?

One might respond to these questions by saying that, unless there is more compelling linguistic evidence in support of one interpretation, one cannot justifiably propose any one of these interpretations

as providing a more accurate representation of the author's intentions. There is nothing *in principle* wrong with this response. Within the exercises of this text, we'll frequently encounter evidential ties between diagrams, i.e., situations where the available evidence cannot determine which of two or more diagrams is the most accurate representation of the structure of an argument as conceived by its author. In fact, it's possible that an author may simultaneously have two or more argumentative structures in mind. The two diagrammatic proposals (M) and (M1) are, after all, compatible with one another, and one might argue that the best way to describe the structure of passage (M), as conceived by its author, is to construct both diagrams.

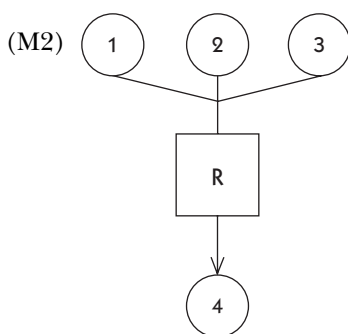
In principle, we'll allow for this option. However, in the case of passage (M) in particular, there does seem to be a reason to prefer diagram (M) as a structural description of what its author *principally* had in mind. An author's goal is to rationally persuade her audience to adopt a belief in the truth of her conclusion. One cogent evidential path toward that conclusion ought to be sufficient to achieve this goal. Furthermore, an argument better achieves this goal to the extent that it can rationally inculcate, within its audience, a more secure belief in the truth of the argument's conclusion by providing stronger evidential support.

Now, on the assumption that the truth of premises (1) to (3) is not called into question by any concerned party, the argument portrayed by diagram (M) better achieves the goal of rational persuasion. That argument offers one cogent evidential path in support of (4), which guarantees that (4) is true. (M1), on the other hand, portrays three separate cogent evidential paths in support of (4), any two of which are essentially redundant in the presence of the third, since each path yields exactly a three-fourths probability that (4) is true. (M)'s one path, however, yields a far more secure belief in (4). In other words, the argument depicted in diagram (M) is the strongest of the four depicted arguments. Therefore, where there is no evidence to decide between the two (sets of) diagrams, charity dictates the choice of (M) over (M1). In so attributing to the author of passage (M) a belief in the validity of her own argument, we're of course not suggesting that she would challenge any of the specific beliefs attributed to her by (M1). As noted earlier, the various diagrams under discussion are compatible. But, as we'll often discover, it's not always possible or practical to include,

within a single diagram, every claim that we could or might want to make about (the author of) some specific argument. Diagrams, like any other representational tool, have a limited expressive capacity. Diagram (M), however, captures well the most noteworthy features of the evidential structure of passage (M).

Generalizing, therefore, charity recommends that, other things being equal, it's reasonable, when diagramming arguments, to maximize the strength of an author's grounding claim instead of maximizing the number of her grounded arguments. In other words, one argument with a stronger grounding claim is generally preferable to a number of arguments with weaker grounding claims.

Frequently, however, other things are not equal. Suppose, for example, that, as a member of a criminal investigation team, you're assigned the task of rationally persuading a judge that there is sufficient evidence to justify initiating criminal proceedings against Molly on the charge of murder. You have at your disposal three bits of evidence against Molly, articulated respectively within propositions (1), (2), and (3); (4) is the proposition that Molly committed murder. Each single bit of evidence is relevant to (4), and any two bits of evidence reliably establish (4) well beyond a reasonable doubt. Therefore, (M1) (without the numerical values occurring within the modalities) represents the structure of three reliable convergent arguments that you could present to the judge. Suppose further that your three premises, once pooled, support a more reliable argument, as diagrammed below.



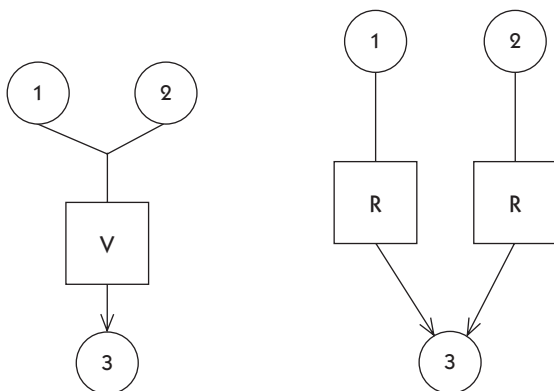
However, suppose you also have reason to believe that the judge will very likely challenge the admissibility of at least some of your evidence within a court of law. In this scenario, you probably want to be perceived (by that judge) as offering three separate convergent arguments.

The stronger grounding claim represented within diagram (M2) is probably of little-to-no interest to you, because it's of little-to-no legal relevance. Since it's very unlikely that all three bits of evidence will stand up in a court of law, it's very unlikely that any prosecutor could make use of the strongest reliable argument in principle available to her. Besides, establishing that Molly is guilty beyond a reasonable doubt is all that matters in this context. Since you're confident about the grounding claims of the arguments depicted by the diagrams within (M1), your most serious worry is that the judge may rule that some of your evidence is inadmissible. Therefore, you most want to impress upon her that you have a total of three separate evidential paths in support of (4), each of which is strong enough individually to convict Molly well beyond a reasonable doubt. You want the judge to understand that even if, as is likely, one item (but hopefully no more than one item) within your body of evidence is challenged as inadmissible, you still have a legally compelling case against Molly. This fact is more salient for you, in this context, than the fact that the argument diagrammed within (M2) contains a stronger grounding claim. Therefore, (M1) is probably the most accurate description of what you take yourself to be doing in appearing before the judge.

Contextual features, therefore, can sometimes favor attributing to an author two or more weaker grounded arguments over a single more strongly grounded argument. But contextual appeals can also reinforce our general recommendation to maximize the strength of an argument's grounding claim, even in cases where, as in the investigation of Molly, some of the available relevant information is contested in some fashion. Suppose, for example, that some author has employed a controversial premise in constructing an argument in support of a mathematical theorem, and that the structure of that argument can accurately be displayed using either diagram (M) or the diagrams within (M1). If this individual is working within a field of mathematical inquiry where proofs are considered to be virtually worthless unless they achieve the standard of rigor exemplified by valid arguments, then it's most reasonable to represent this author's argument as a valid argument, as depicted in diagram (M). For this author in this context, nothing less than a valid evidential path in support of her conclusion would be of any value. So basing her sole argument on a questionable premise is a risk she's willing to assume, given the alternative of having no argument worthy of consideration to offer at all.

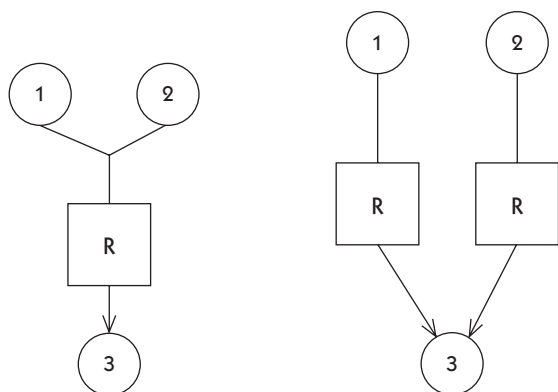
EXERCISES

- 4.46 Compose an argumentative passage that can accurately be represented by either of the following diagrams.



Which diagram, if either, best describes the argument expressed in your passage? Justify your answer.

- 4.47 Repeat exercise 4.46, this time with a three-premise valid argument on the left and three one-premise reliable arguments on the right.
- 4.48 Compose an argumentative passage that can accurately be represented by either of the following diagrams. Which diagram, if either, best describes the argument expressed in your passage? Justify your answer.



- 4.49 Repeat exercise 4.48, this time with a three-premise reliable argument on the left and three one-premise reliable arguments on the right.

- 4.50 Repeat exercise 4.48, this time ensuring that the single reliable argument on the left is no more reliable than either of the two reliable arguments on the right. Is the argument depicted on the left compact? Justify your answer.
- 4.51 Is it possible for premise (1) to be relevant to proposition (3) within one convergent argument, and for premise (2) to be relevant to (3) within some other convergent argument, but for the two premises, once pooled, to be irrelevant to (3)? If so, illustrate your answer with an example. If not, explain why not.
- 4.52 Is it possible for premise (1) to reliably support proposition (3) within one convergent argument, and for premise (2) to reliably support (3) within some other convergent argument, but for the two premises, once pooled, to be irrelevant to (3)? If so, illustrate your answer with an example. If not, explain why not.
- 4.53 Repeat exercise 4.52, this time requiring that the two pooled premises together provide relevant but unreliable support for (3).
- 4.54 Explain how it's possible that an argument *A* could fail to be convergent, even though each premise within *A* converges on *A*'s conclusion. Illustrate your answer with an example and determine whether your argument is compact.
- 4.55 How would our account of convergent arguments differ, were we to remove clause (i) from the definition offered in the last paragraph of section 4.2?

4.5 Squiggly Diagrams

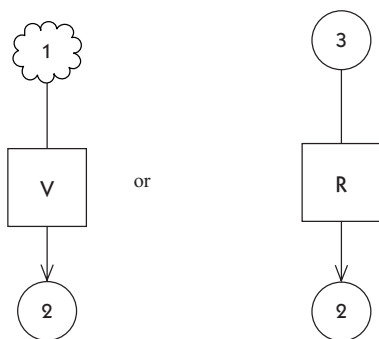
We saw in the [previous section](#) that searching for a charitable microstructural interpretation of an argumentative passage often involves balancing two separate factors. On the one hand, we need to be sensitive to the strength of the grounding relations obtaining between competing argumentative interpretations. On the other hand, we need to appreciate how these various grounding relations are dependent upon the information contained within the arguments' premise sets. While stronger grounding relations are generally preferable to weaker ones, sometimes arguments with weaker grounding relations can better withstand challenges to an argument's base of evidential support. We'll now introduce a further diagrammatic convention that will allow us to visually track one aspect of this second kind of concern.

Suppose that some normal author has presented you with an argument based upon an ambiguous text. It's clear, let's say, that this author is attempting to rationally persuade you to believe a certain conclusion. So it's clear that you are a member of her social as well as her intentional audience. But it's not clear, to you at any rate, how to identify the argument's premise(s). You've narrowed the choice down to two options – either this individual is presenting a single-premise valid, convergent argument in support of her conclusion, or she's employing a different premise while presenting a single-premise reliable, convergent argument in support of that same conclusion. Each interpretation, we'll assume, is equally well-supported by the available evidence. Suppose, finally, that it's rational for you to believe the premise of the reliable argument, but not rational for you to believe the premise of the valid argument.

It's evident that only one of these two arguments – the reliable one – could be cogent for you. In Chapter 3 we argued that, in dealing with normal arguments, it's reasonable to interpret overall argument strength in terms of (thick) cogency. Since *ex hypothesi* the argument in question is normal and each interpretation is equally well-supported by the available evidence, it follows that charity dictates choosing the reliable argument as the stronger of the two arguments. Cogency trumps validity because it's reasonable to assume that a normal author is more interested in rationally persuading her audience than in merely maximizing the strength of her argument's grounding relation.

The most salient features of this choice situation can be captured diagrammatically if we now allow, as an option, the possibility that one or more of the numbers present within a diagram – but only those which represent the premises of an argument – may be enclosed by either regular circles or by (what we'll call) *squiggly* circles, as shown below.

(N)



We'll refer to the diagram on the left as a *squiggly diagram*, as it contains at least one squiggly symbol. The squiggleness of a squiggly symbol is meant to suggest that an argument's author is confused or mistaken on some issue, or at least that some cognitive dissonance obtains between the author and her audience. (However, for those who find squiggly lines to be too messy or inelegant, we'll also allow *broken* symbols – that is, symbols drawn with a number of disconnected, short dashes – as a stylistic variant.)

Each of the above diagrams offers one possible graphic representation of the structure of someone else's argument. You are, let's say, the *artist* responsible for these diagrams. In constructing the diagram on the left, you are attributing to the argument's author the beliefs: that proposition (1) is true; that (1) is independently relevant to (2); and that (1) validly grounds (2). Since the author of the argument in question is normal, she also believes that it's rational for you, as an audience member, to believe these claims as well. This much is familiar to us. The squiggly circle around premise (1), however, records in addition your *denial* of the author's claim that it's rational for you to believe that (1) is true.

As an artist, your diagram of someone else's argument is of course *your* diagram. But until now, none of your diagrams could record anything other than your beliefs about some author's beliefs about her own argument. Squiggly circles provide artists with the option of speaking out from their own epistemic standpoint to record diagrammatically, in a limited way, something of their own beliefs about the argument under consideration.

Notice, however, that the use of squiggly diagrams involves no loss of expressive content. A squiggly circle around a numbered premise does not express an artist's claim that she fails to believe that premise, nor that she believes it to be false. A squiggly circle indicates nothing beyond the bare denial of the author's claim that it's rational for her, the artist, to believe that premise. Therefore, a squiggly diagram never conveys any less information about the microstructure of an argument as it is conceived by its author, than does a corresponding diagram without any squiggly circles. In diagrammatically identifying which of an author's claims an artist is denying, a squiggly circle ipso facto identifies that very claim.

This bare denial is extremely important nonetheless, since it amounts to the claim that the argument in question is not cogent for you, the artist. As there is at least one proposition within the argument's premise set which, in your judgment, is not rational for you to believe, the argument in question fails the **T** condition for you. (Notice that non-cogency does not follow from the claim that you fail to believe that a certain premise is true, or even that you believe it to be false. Neither of these claims has any normative content.)

So far we've indicated that artists are permitted to employ squiggly circles when depicting (normal) arguments that are directed toward them as social (and therefore also intentional) audience members. This restriction is important, for otherwise the denial conveyed by a squiggly circle would not necessarily mark a *disagreement* between an artist and an argument's author. Suppose that you are *not* a member of some author's intentional audience but that, in depicting her argument by way of a squiggly diagram, you record your conviction that it's not rational for you to believe some premise within that argument. In doing this, you're not disagreeing with the author, because her claim, in presenting the argument, is that it's rational for the members of her intentional audience to believe her premises, and ex hypothesi you're not part of that audience.

We'll stipulate that the denial conveyed by an artist's squiggly circle must also express a disagreement between that artist and the author whose argument she is diagraming. This means that squiggly circles may be employed in two different ways. In general, a squiggly circle records an artist's conviction that it's not rational, for some member of an author's intentional audience, to believe a certain premise of that author's argument. In one case, the artist is, or at least believes herself to be, a member of the author's intentional audience, and so the squiggly circle records her own personal beliefs and her own disagreement with the author over what it's rational *for her*, the artist, to believe. In the other case, the artist's squiggly circle attributes a bare denial to *some other* individual who is, or at least who is believed by the artist to be, a member of the author's intentional audience. In this case, the artist and the author disagree over what it's rational for someone else (i.e., someone other than the artist) to believe.

It's usually difficult for artists to form confident judgments about the epistemic states of other individuals who are (believed to be) members of some author's intentional audience. For one thing, it's often difficult just to identify the members of that audience. For another, while authors provide us with (written or oral) argumentative passages, we often have no direct linguistic evidence of the beliefs of audience members. And finally, audiences do not necessarily form homogeneous epistemic communities. It's possible, for example, for audience members to disagree among themselves over the truth value of an argument's premise, and therefore over the cogency of the argument itself. Therefore, of the two cases described above, we'll treat the first and less problematic situation as our default position. That is, whenever an artist chooses to exercise her option of employing squiggly circles, we'll assume that she is recording her own personal disagreement with the argument's author, unless it is somehow clearly indicated by the artist that her squiggly circles are being used to record the beliefs of some other individual member of that author's intentional audience.

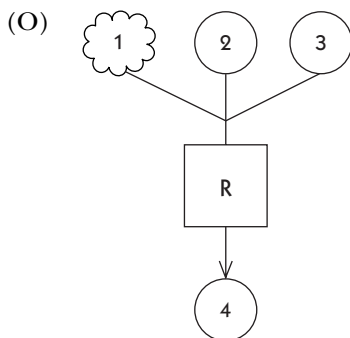
In discussing the diagrams within (N), we assumed the default position. We assumed that some author was attempting to rationally persuade you of the truth of some proposition, and that the diagram on the left within (N) records your conviction that it's not rational for you, as a member of that author's intentional audience, to believe proposition (1). So the squiggly circle in that diagram transparently conveys your conviction that the argument so depicted is not cogent for you. Since cogent arguments are stronger than non-cogent arguments, charity recommends selecting the diagram on the right. In diagrammatic terms, this strategy is encapsulated by the following simple rule: Whenever possible, avoid squiggly diagrams.

This rule, because it's simple, has the character of a slogan. It's easy to remember, but also easy to misinterpret. Artists do indeed have a choice of whether or not to include squiggly circles within their diagrams. Squiggly diagrams are optional. But that does not mean that, as artists, we should avoid them at all costs. First and foremost, we want our diagrams to be accurate. So we should not diagrammatically record a belief that disagrees with the beliefs of an author unless we are confident in that belief attribution. (As noted above, generally we

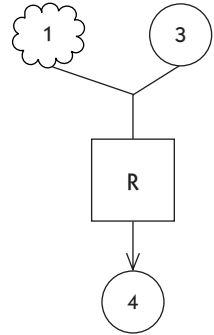
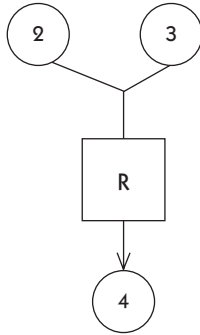
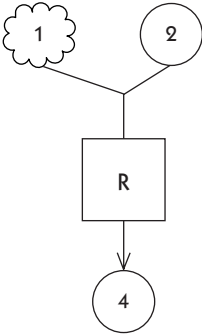
are more confident attributing beliefs to ourselves than to other audience members.) So when an artist lacks this confidence, she should refrain from constructing a squiggly diagram. And this choice does not in any way amount to an endorsement, on the part of the artist, of the argument in question. A regular or non-squiggly diagram of an author's argument is *simply* a description of the microstructure of that argument, as conceived by its author.

At the same time, as artists we have an interest in knowing about any disagreements between authors and audience members that are relevant to applications of the principle of charity, insofar as they bear upon questions of cogency. Therefore, our rule is more precisely stated as a recommendation to select non-squiggly diagrams over squiggly diagrams, when one has that option after a careful review of which diagrams are best supported by the available evidence, and where that review includes an investigation into the possibility of disagreements between authors and audience members.

We can illustrate another type of application of this rule by returning to the case of Molly the suspected murderer. Suppose this time that you're the judge who is required to make a ruling as to whether there is enough evidence against Molly to take the case to trial. As before, you're presented with three bits of independently relevant evidence that may be construed as supporting either three separate two-premise reliable arguments or a single more reliable three-premise argument. This situation is different in one further respect, however. This time you're convinced that it's not rational for you to believe one particular bit of evidence. Your choice can therefore be represented diagrammatically as follows.

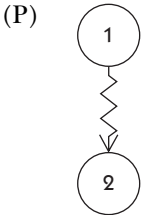


or

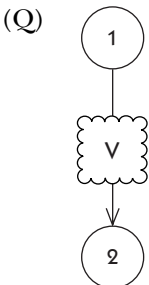


Here it's not possible to avoid a squiggly diagram altogether. But charity dictates opting for the latter representation consisting of three separate diagrams, since that interpretation alone holds out the *prospect* that the argument's author may yet succeed in presenting you with at least one cogent argument.

With the apparatus of squiggly circles in hand, it's now a simple matter to incorporate squiggly arrows and squiggly modalities into our diagrams as well. Suppose that, in each of the remaining diagrams within this section, you, the artist, are a member of some author's intentional audience. The following diagram

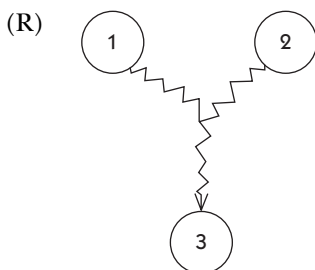


records your denial of the author's claim that it's rational for you to believe that (1) is independently relevant to (2). The next diagram



records your denial of the author's claim that it's rational for you to believe that the inference from (1) to (2) is valid. (Notice that, for purely stylistic reasons, the letter enclosed within a squiggly modality is not tampered with.) Squiggly arrows and squiggly modalities function just like squiggly circles in that they record nothing beyond an artist's denial of a specific authorial claim. Therefore, the use of these additional squiggly symbols in no way restricts a diagram's expressive capacity. As before, a squiggly diagram conveys exactly the same information as its non-squiggly counterpart, and more.

Nonetheless, one must be careful not to attribute to the artist responsible for a squiggly diagram more than her diagram conveys. Diagram (Q), for example, while recording your denial of the claim that it's rational for you to believe that (1) validly grounds (2), is altogether silent on the issue of whether, in your judgment, the argument in question is reliable or unreliable. Similarly, the following diagram

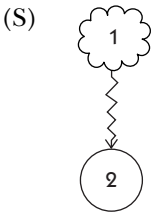


records your denial that it's rational for you to believe that (1) is independently relevant to (3), as well as your denial that it's rational for you to believe that (2) is independently relevant to (3). But diagram (R) is silent on the issue of whether, in your judgment, (1) and (2) might be relevant to (3) in some other (i.e., non-convergent) manner. And diagram (P) is silent on the issue of whether, in your judgment, (1) might possibly be relevant to (2) in combination with some other (as yet unidentified) propositions. Naturally, in striving to achieve expressive clarity by restricting the content of squiggly symbols to bare denials, we thereby limit the expressive capacity of our diagrams along some other dimension. As noted earlier, there is only so much information that can be conveyed by any single diagram.

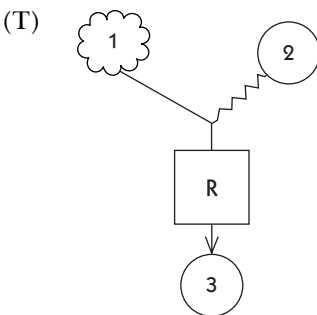
Nonetheless, squiggly diagrams do always succeed in expressing the claim that the argument in question is not cogent for some member of

the author's intentional audience. While it's possible that you might believe, with respect to diagram (Q), for example, that (1) reliably grounds (2), you ought not to be persuaded by any argument claiming that (1) validly grounds (2). The argument depicted within (Q), containing that specific grounding claim, is not cogent for you, although a closely related argument might be. Similarly, while it's possible that you might believe, with respect to (R), that propositions (1) and (2) together do form some kind of relevant premise set in support of (3), you ought not to be persuaded by any argument that claims that each of (1) and (2) are independently relevant to (3). The argument depicted within (R), containing those specific relevance claims, is not cogent for you, although a closely related argument might be.

We'll also permit artists to produce significantly more informative diagrams by simultaneously employing different types of squiggly symbols within a single diagram. The following diagram, for example,



records your conviction that it's not rational for you to believe either that (1) is true or that (1) is independently relevant to (2). And the following diagram



records your denial of the authorial claim that (2) is independently relevant to (3), without challenging the claim that (1) is independently

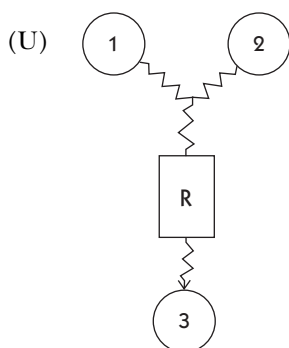
relevant to (3). (Notice, incidentally, that you have also challenged the claim that it's rational for you to believe (1).) Therefore, this diagram conveys, without challenging, the claim that at least one item of evidence has been offered in support of (3). Therefore, it's appropriate that a non-squiggly arrow should emerge from below the point of intersection of the two relevance arrows, since (1) is (claimed to be) relevant to (3) *independently* of (2). And it's appropriate that the flow of that same non-squiggly arrow should be interrupted by a non-squiggly modality, since it's at least possible that the evidence from (1) could reliably ground (3), and because you have not specifically challenged that reliability claim. Of course, in spite of the presence of these non-squiggly symbols, the argument depicted within (T) nonetheless fails to be cogent for you.

In general, then, when diagramming pooled premises involving squiggly arrows, an arrow should emerge from below the point of intersection as a non-squiggly symbol provided that at least one non-squiggly arrow appears above the point of intersection. And in this sort of a case we allow for the possibility that the flow of that emerging non-squiggly arrow may be interrupted by a non-squiggly modality as well.

We of course also allow for the possibility that a non-squiggly arrow may intersect with a squiggly modality. Diagram (Q), for example, challenges an argument's specific grounding claim without challenging the claim that the argument's premise set is relevant to its conclusion. And we could have made a similarly restricted claim by including a squiggly modality within diagram (T).

Suppose, however, that you were to deny, of *each* premise within an allegedly reliable convergent argument, that that premise is relevant to the argument's conclusion. Then that argument, in your judgment, possesses an irrelevant premise set, when it is interpreted as containing convergent premises. You ought, therefore, to deny as well that the argument in question is grounded in the specific manner in which its author claims it to be grounded. Since there is a transparent conceptual connection between these two claims, we can simplify our diagrams considerably by adopting the convention that when a squiggly arrow intersects with a modality, that configuration ipso facto constitutes a denial of the specific grounding claim recorded within that

modality. That is, the following diagram

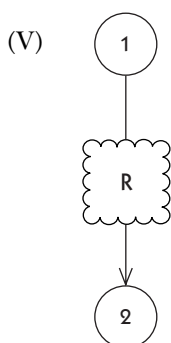


should be understood as tacitly denying that it's rational for you to believe that the argument in question is grounded in the manner suggested by its author. In your judgment, propositions (1) and (2), viewed as convergent premises, cannot reliably ground (3). But diagram (U) is silent on the question as to whether (1) and (2) might reliably (or validly) ground (3) via some other pattern of relevant support.

In the interests of graphic simplicity, we'll also stipulate that a squiggly arrow may never intersect with a squiggly modality. (In those rare cases in which a valid argument has an irrelevant premise set, we can effectively override our conventions by including an annotation, beside the diagram, to the effect that this argument is indeed valid.) It may be helpful, in recollecting these diagrammatic conventions, to think of squiggly arrows as silently or asymptotically (i.e., non-visually) infecting any modality with which they come into contact.

That artists are permitted to employ squiggly arrows and squiggly modalities naturally raises the question whether our diagramming apparatus ought to incorporate squiggly arrowheads as well. The answer is yes. However, while there are special circumstances in which we do need squiggly arrowheads to record an artist's denial of an authorial grounding claim, we can significantly limit the need for them by adopting two further diagrammatic conventions. Suppose, as is the case in (Q), that you are prepared to challenge an author's claim that her argument is valid. Then, in challenging her particular grounding claim, you are thereby expressing the very denial that would be conveyed by a squiggly arrowhead – namely, that it's not rational for you

to believe that her argument is grounded (in the manner she claims it to be grounded). Therefore, there's no need for a squiggly arrowhead within (Q): that diagram adequately conveys the artist's denial that it's rational for her to believe the authorial claim that a certain argument is validly grounded (while remaining silent on the issue of whether it's reliable or unreliable). Similarly, diagram (V)



adequately conveys the artist's denial that it's rational for her to believe the authorial claim that a certain argument is reliably grounded (while remaining silent on the issue of whether it's valid or unreliable). So there's no need for a squiggly arrowhead within (V) either.

Therefore, we can eliminate the need for including squiggly arrowheads beneath squiggly modalities by explicitly adopting the convention that a squiggly modality within a diagram ipso facto constitutes a denial of that argument's particular grounding claim. And in the interests of graphic simplicity, we'll forbid the use of squiggly arrowheads below squiggly modalities.

By parity of reasoning, we'll forbid the use of squiggly arrowheads within diagrams where no modality appears immediately above that arrowhead, but where the arrowhead is intersected by a squiggly arrow. There's no need for a squiggly arrowhead in a diagram such as (P), for example. Anyone who denies that an argument's premise set is relevant to that argument's conclusion should also deny that that premise set grounds that conclusion in any way. (Notice that we don't have to make an exception here for valid arguments. Although an argument may be valid while containing a premise set that is irrelevant to its conclusion, no such valid argument is grounded. No argument that provides no evidence in support of its conclusion can provide enough evidence

Summary of Squiggly Diagram Restrictions

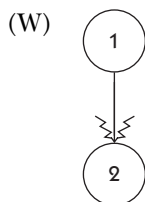
1. A squiggly circle may not be drawn around a conclusion.
2. Squiggly arrows may not intersect with squiggly modalities.
3. Squiggly arrows may not intersect with squiggly arrowheads.
4. Squiggly arrowheads may not appear below squiggly modalities.

Figure 4.

to justify belief in that conclusion.) Since there is a transparent conceptual connection between these two claims, we'll adopt the further convention that a squiggly arrow flowing directly into an arrowhead ipso facto constitutes a denial of that argument's particular grounding claim. So, again in the interests of graphic simplicity, we won't ever allow a squiggly arrow to intersect with a squiggly arrowhead.

It may be helpful, in recollecting these diagrammatic conventions, to think of squiggly arrows and squiggly modalities as silently or asymptotically (i.e., non-visually) infecting all arrowheads in their immediate vicinity. Their squiggleness, if you will, flows downward and is captured by the (hollow) arrowhead.

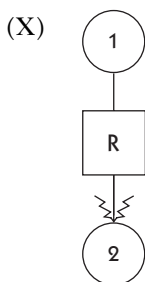
Squiggly arrowheads cannot be eliminated as entirely redundant, however, since they can be used to express distinctive claims in three special cases. Diagram (W), for example,



records an artist's denial of the claim that (1) grounds (2), without challenging the claim that (1) is relevant to (2), and without recording, never mind challenging, any more specific authorial grounding claim. So a squiggly arrowhead may appear within a diagram that lacks any squiggly arrows, or any modality whatsoever.

A squiggly arrowhead can also appear immediately below a non-squiggly modality. Although we've recommended that reliability constitutes a grounding relation in a very broad range of cases, we've also allowed for the possibility that a reliable argument may

be ungrounded. If, for example, one has a strong epistemic reason to be especially cautious about accepting an argument's conclusion as true, then even a reliable argument in support of that conclusion may fail to provide you with enough evidence so that you would be justified, within that context, in believing that proposition to be true. So diagram (X), for example,



challenges the authorial claim that (1) grounds (2), without challenging the authorial claim that the inference from (1) to (2) is reliable.

Finally, because of the requirement of total evidence, there's another kind of situation within which it can be appropriate to construct a diagram with a squiggly arrowhead and a non-squiggly modality. Suppose in the case of argument (X), for example, that it's rational for you to believe both that (1) is true and that the inference from (1) to (2) is reliable. However, in this case it's not rational for you to believe (3), not because of any concerns you have about the particular strength of (X)'s reliable inference, but because you rationally believe some other proposition that defeats that inference. So diagram (X) once again records (but for a different reason this time) the claim that it's not rational for you to believe, of the reliable argument (X), that (X) is grounded. In light of your other beliefs, (1) doesn't provide enough evidence to justify you in believing that (2) is true.

It's not uncommon for a reliable argument to be defeated, and therefore not uncommon for a squiggly arrowhead to appear below a non-squiggly R-modality. Furthermore, a squiggly arrowhead can also appear below a non-squiggly V-modality. Although this combination will occur less frequently, consider, for example, the diagram of a valid, ungrounded argument with a relevant premise set.

We'll therefore encounter squiggly arrowheads in just three kinds of situations where their employment would not be redundant given the presence of other squiggly symbols within the diagram. One of

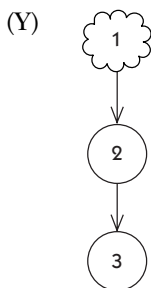
these situations – the second one discussed – should be relatively rare, while the other two may be quite common.

Finally, we note that, in all but one trivial case, we'll forbid the use of squiggly circles around any proposition that represents the conclusion of an argument. The use of squiggly symbols within diagrams arises from our interest in determining whether it's rational, for the members of an author's intentional audience, to be persuaded to believe a certain conclusion on the basis of the evidence cited within a certain premise set. A squiggly circle around a conclusion, therefore, would express an artist's denial of the claim that it's rational for her (or some other intentional audience member) to be persuaded to believe that proposition, on the basis of the evidence cited. However, since the presence of a squiggly premise, a squiggly modality, a squiggly arrow, or a squiggly arrowhead automatically signals that the argument being diagramed is not cogent for the audience member in question, any use of a squiggly conclusion, within a diagram which already contains some other squiggly symbol, would be redundant. A squiggly premise, for example, already *ipso facto* conveys the claim that it's not rational (for someone) to be persuaded to believe the argument's conclusion, on the basis of the evidence cited. To make the same point in a slightly different way, any denial of the claim that it's rational to be persuaded to believe the conclusion of an argument, on the basis of the evidence cited, must be based upon a denial about what it's rational to believe either about the premises of that argument or about their relationship to the argument's conclusion.

The one trivial case in which we allow a conclusion to be enclosed within a squiggly circle is when that proposition also serves as a premise within some other argument under consideration. As noted previously, this is a defining feature of serial arguments. The squiggly enclosure of the argument's conclusion is trivial in this case because we'll stipulate that, in diagramming serial arguments, any squiggly circle that appears both below one arrowhead and above some other arrowhead, ought to be understood as recording solely an artist's denial of the claim that it's rational for her to believe some *premise* within that argument.

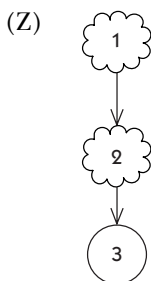
The drawing of a squiggly circle around such a premise is itself not trivial, however. Suppose that someone employs what is, for you, a non-cogent argument in support of proposition (2), and then employs (2) again as a premise within some further argument in support of proposition (3). It may be rational for you to believe (2) on

independent grounds, despite the fact that (2) appears as the conclusion of what is, for you, a non-cogent argument. Sometimes people offer poor arguments in support of otherwise defensible claims. This situation might be represented by something like the following fused diagram



where it's clear that, although the argument from (1) to (2) is not cogent for you, you haven't challenged the claim that it's rational for you to believe (2) as a premise within a separate second argument.

Diagram (Y) can therefore be contrasted with a fused diagram such as



where it's clear, not only that the argument from (1) to (2) is not cogent for you, but also that it's not rational for you to believe (2) as a premise within a separate second argument in support of (3).

EXERCISES

- 4.56 Compose an argumentative passage that can accurately be represented by either of the diagrams within (N).
- 4.57 Assume that *A* is a normal argument and that you have constructed a squiggly diagram of *A*. Under what conditions, if any, would your squiggly symbol(s) carry any implications concerning what it's rational for the *author* of *A* to believe? Under what

conditions, if any, would they carry implications concerning what it's rational for the members of the author's intentional audience to believe? Justify your answer.

- 4.58 For each of the arguments depicted by diagrams (P)–(Z), state which of the four cogency conditions are *not* satisfied, for you, by that argument.
- 4.59 Construct modal, squiggly diagrams of arguments (A) and (C) from Chapter 3.
- 4.60 Suppose that diagram *D* depicts a single argument and contains a squiggly arrowhead. Under what conditions, if any, could *D* contain any additional squiggly symbols?
- 4.61 Under what conditions, if any, is it permissible to employ a squiggly circle as the lowermost node within a diagram?
- 4.62 Consider a diagram that is just like (Z) except that proposition (1) is enclosed within a regular (non-squiggly) circle. Explain why such a diagram would be peculiar, although not literally incoherent.
- 4.63 Diagram the normal arguments within exercise 4.44, employing squiggly symbols as appropriate.

4.6 Illustrations

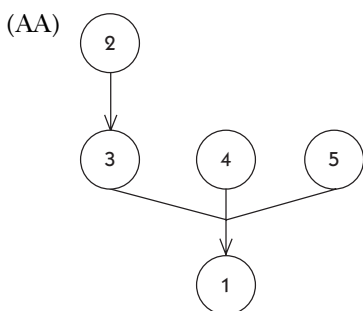
The examples of convergent arguments we've discussed so far have deliberately been somewhat artificial in nature because it's best, when first explaining conceptual points about some practice, to use examples that raise as few interpretational problems as possible. But the prose passages that people actually employ while expressing convergent arguments are often extremely difficult to understand. In this section, by working through a few real-life examples, we'll once again illustrate the importance of charitable and careful listening. The study of microstructural matters can enhance our sensitivity to the (sometimes surprising) number of alternative interpretations that a text might plausibly support, which in turn may deter us from hastily (and often unfairly and erroneously) opting simply for the first reading that comes to mind. In what follows, we'll concentrate on listening and refrain from using any squiggly symbols within our diagrams.

We'll start with a relatively easy case – a passage from Julius Lester's *To Be a Slave* wherein he's exploring the problems faced by early white

North American settlers in satisfying their need for a continual supply of human labor.

(AA) (1) Gradually the English colonists turned to Africans as the ideal solution. Because (2) they were black, (3) it would be difficult for them to run away and escape detection. Too, (4) they could be bought outright and held for as long as they lived. And finally (5) the supply was inexhaustible.

Here Lester is attempting to convince his readers that black Africans provided English colonists with an ideal solution to their labor problems by explaining the advantages of black slavery from the colonists' point of view. Propositions (3), (4), and (5) each provides an independent reason in support of (1), where (3) in turn is supported independently by (2). So it's clear that Lester has cited three separate factors that made black slavery attractive to the English. But how many inferences has Lester drawn? That is, within this passage, how many reasons are offered for believing (1)? The answer to this question becomes clear once we attend to Lester's use of a single word. The argument's conclusion claims that blacks provided the *ideal* solution to a certain set of problems. This is a strong claim, and one that is not particularly well-supported by any of propositions (3), (4), or (5) entirely on its own. The most likely way in which this passage could cogently support proposition (1) is if (3), (4), and (5) were first pooled before drawing a single inference in support of (1). This argument therefore most likely has the following structure, where three reasons are pooled to provide a single reason for believing its conclusion.



Had proposition (1) expressed a weaker claim, however, it might have been reasonable to detect three separate convergent arguments within passage (AA) in support of that conclusion.

Here's a passage, written by David Boyd, that appeared in the August 24, 2002, issue of *The Globe and Mail* where, once again, a single word makes all the difference.

(BB) Despite (1) a decade ostensibly devoted to pursuing sustainable development, (2) most environmental problems are worsening in Canada and globally. (3) The negative effects of climate change are being felt from Nunavut to Alberta, from Europe to Tuvalu. (4) The diversity of life is diminishing, (5) fresh water is increasingly scarce and (6) polluted, (7) toxic chemicals continue to jeopardize human health, and (8) forests and (9) fisheries are declining.

Propositions (3) through (9) each provides a reason for believing that environmental problems are worsening in Canada and globally. But not one of these propositions, on their own, grounds or provides a reason for believing that *most* of these environmental problems are worsening. Therefore, since that's the conclusion of passage (BB), it's not plausible to interpret (BB) as expressing seven separate convergent arguments, each with its own inference in support of (2). Rather, since each of propositions (3) through (9) converges upon or provides a reason in support of (2), it's more charitable to interpret (BB) as expressing a single convergent argument with seven independently relevant, pooled premises. Now, (2) is also a fairly strong claim. So there's room for rational disagreement over whether these seven premises, once pooled, do indeed ground or provide a reason for believing (2). But that interpretation, unlike the previous one, at least holds out a reasonable prospect that the argument expressed within (BB) might be cogent.

Pooling premises is by no means always the most reasonable course of action, however. In the following passage from *Mexico*, Jack Rummel comments upon Francisco Madero, one of the leaders of the 1910 Mexican revolution.

(CC) (1) Madero was an unusual man for his time in Mexico. (2) Thirty-seven years old, (3) he was a spiritualist (4) who did not smoke or (5) drink and (6) espoused vegetarianism.

Proposition (1) expresses a fairly weak claim. Someone is unusual for their time if they fit a description that is satisfied by a (small)

minority of the population. Propositions (3) through (6), therefore, are not merely independently relevant to (1). Each proposition, on its own, provides a reason to believe (1) as well – especially when we take into account the fact that readers of Rummel’s book could already be expected to know, from other passages, that Mexico was, at the time, “a country where nearly everyone who could afford to do so ate meat, and where drinking was considered to be a sign of *machismo*.” Given this background knowledge, it’s reasonable to infer that it would be unusual for a male Mexican revolutionary leader in the early 1900s simply to be a vegetarian, or a teetotaler, and so on.

Passage (CC), therefore, arguably conveys four separate (grounded) convergent arguments. (We’re tentatively assuming that proposition (2) is noise relative to this passage.) On this interpretation, the author of passage (CC) therefore enjoys an advantage over the author of passage (BB). Should, say, one or two premises within argument (BB) be challenged as claims that it’s not rational for audience members to believe, the sole grounding claim expressed within (BB) would be seriously damaged, if not destroyed. Should an audience member similarly challenge one or two premises within passage (CC), on the other hand, two or three arguments in support of (CC)’s conclusion would survive as being arguably cogent and immune from any such challenge.

The reasons for pooling premises are stronger in (BB) than they are in (CC). But there’s very often a strong temptation to pool the premises of *any* convergent argument, since it’s usually the case that pooling the premises will strengthen the argument in question by bringing more evidence to bear upon its conclusion. An interpretation of passage (CC), for example, as expressing a single four-premise convergent argument in support of proposition (1) yields a more reliable (and therefore stronger) argument than any of the four arguments described in the previous paragraph. Assuming that all five arguments are normal and cogent, charity dictates opting for the single four-premise argument. It will be recalled, however, that charity operates only in the case of evidential ties between competing argumentative readings. Our claim that (CC) expresses four separate convergent arguments is therefore based on the claim that this is the interpretation best supported by the available evidence – in particular, by a literal reading of (1) as expressing a fairly weak claim that is strongly

supported by each of (3) through (6). We're claiming that Rummel is offering four separate reasons to believe that Madero was an unusual man for his time in Mexico. It's true that each premise highlights a different aspect of Madero's unusual personality. But Rummel does not likely intend that his audience should first weigh (3), (4), (5), and (6) together before accepting proposition (1). A shorter passage, one concluding after the word "spiritualist," for example, would also, in our judgment, be viewed by Rummel as conveying a cogent argument in support of (1).

Others may reasonably challenge this interpretation of passage (CC). (There would be a strong case for pooling the argument's premises if, for example, contextual features made it clear that Rummel really intended to establish that Madero was a *very* unusual man for his time. Perhaps this stronger claim is pivotal to Rummel's larger project.) And, of course, it's also possible that the distinction we're drawing – between four single-premise convergent arguments and one convergent argument with four pooled premises – may not have occurred to Rummel (under any description), and it's possible that this is a distinction that doesn't matter to him. Rummel might happily endorse either interpretation, especially since none of his four premises is controversial. (Recall that the case for separate convergent arguments increases as the premises become more controversial, since this generally increases the prospect of identifying at least one cogent argument.) But of course, even if Rummel himself is unclear about or indifferent to the microstructure of his own argument, it's important for *us* to settle on a preferred interpretation of an author's argumentative passage to the extent that we are interested in deciding whether it's rational for *us* to believe the main conclusion of that passage, on the basis of the evidence cited by its author. That having been said, it's certainly less crucial to settle on one specific preferred interpretation when, as is the case in (CC), each of the (five) reasonable options under consideration is very likely to be cogent.

In other cases where controversial premises are employed to argue in support of controversial and extremely consequential conclusions, identifying the microstructure of particular arguments can be of paramount importance. For example, does the following passage, cited from the January 19, 2002, issue of *The Hamilton Spectator*, convey one

or two convergent arguments? (Assume that the author is speaking on behalf of the NAS.)

(DD) The National Academy of Sciences concluded that moral and ethical concerns notwithstanding, (1) human reproduction by cloning should be illegal because (2) it poses such a high risk of injury and death to the clone and (3) to the woman who would bear the clones.

Is the author of (DD), that is, presenting two separate convergent arguments in claiming that the high risk of injury and death, *either* to clones *or* to the women bearing them, provides sufficient reason to justify belief in the illegality of cloning? Or is she instead presenting a single convergent argument, with two pooled premises, claiming in effect that justified belief in the illegality of cloning follows only from a consideration of the risk of injury and death to *both* parties? It's hard to argue convincingly that the wording of the text better supports any one interpretation. But the differences between the two interpretations are far from trivial. The risk of injury or death to women may be significantly different both in kind and in magnitude from the risks incurred by a clone. And it may be considered relevant that women, but not clones, are able to consent to this procedure. So the content of (2) and (3), as well as their relevance to (1), can be challenged in various ways. Of the three arguments possibly conveyed within passage (DD), none are *obviously* cogent, and the author of (DD) may actually wish to disavow one or more of these arguments as being non-cogent for herself and her audience.

It may not be possible to confidently attribute any one of these particular interpretations to the author of (DD) without considering how she might respond (or perhaps already has responded) to various (real or hypothetical) challenges. But it's clear that, by interpreting (DD) as expressing a single convergent argument, we allow the author to bring together a more robust body of evidence in support of what is thereby likely to be a stronger inference. By interpreting (DD) as expressing two convergent arguments, we allow the author to present what are likely to be weaker inferences, one of which, however, may better withstand challenges to its evidential base, and that may therefore enjoy broader political support. In difficult cases such as this, we might be able to identify the relative advantages and disadvantages of

competing argumentative interpretations, without being able to settle confidently upon any one interpretation as being either the most accurate or the strongest on balance.

EXERCISES

- 4.64 Diagram the argument(s) expressed within passage (AA), on the assumption that you are a member of the author's intentional audience, employing modalities and squiggly symbols as you see fit. Is the argument cogent for you? Justify your answer.
- 4.65 Repeat exercise 4.64, with respect to passage (BB).
- 4.66 Repeat exercise 4.64, with respect to passage (CC).
- 4.67 Repeat exercise 4.64, with respect to passage (DD).
- 4.68 On the assumption that each of the following passages expresses at least one normal convergent argument, directed to you as a member of the author's intentional audience, identify the macrostructure and construct a diagram of that argument. Employ modalities and squiggly symbols to the extent that you feel confident doing so. Identify any noteworthy presuppositions of the arguments in question, and justify your diagrams as you see fit.
 - (a) "People of all ages and walks of life like haiku, because the form is written in plain language, about common experiences and emotions, and sometimes with a whimsical slant." – Lilian Jackson Braun, *The Cat Who Smelled a Rat*
 - (b) "Ain't no doubt about it, we were doubly blessed. 'Cause we were barely seventeen and we were barely dressed." – Meatloaf, "Paradise by the Dashboard Light"
 - (c) "His wife's staying away in the country was very agreeable to Stepan Arkadyevich from every point of view: it did the children good, it decreased expenses, and it left him more at liberty." – Leo Tolstoy, *Anna Karenina*
 - (d) "It's just that maybe we shouldn't kill [butterflies] for the fun of it. . . . They don't hurt anybody. And they're very pretty." – William Butler, *The Butterfly Revolution*
 - (e) "Certainly it is hard to imagine an animal much stranger than the star-nosed mole, a creature you might picture emerging from a flying saucer to greet a delegation of

curious earthlings. Its nose is ringed by 22 fleshy appendages that are usually a blur of motion as the mole explores its environment. Add large clawed forelimbs, and you've got an irresistible biological mystery." – Kenneth Catania, *Scientific American*, July 2002

- (f) "Jesus Christ, from all accounts a much nicer man than Napoleon, can hardly be called humble, since he claimed to be the son of God." – John Weightman, *The New York Review of Books*, October 24, 2002
- (g) "The humble man, because he sees himself as nothing, can see other things as they are." – Iris Murdoch, *The Sovereignty of Good*
- (h) "There is absolutely no demand for an appliance that converts earthworms into ice cream. Besides, it would be so costly to produce that no one could afford it anyway. So such a device will never be marketable." – An exercise from Eric Nolt, *Informal Logic: Possible Worlds and Imagination*
- (i) "The periodic table is arguably the most important concept in chemistry, both in principle and in practice. It is the everyday support for students, it suggests new avenues of research to professionals, and it provides a succinct organization of the whole of chemistry." – P. W. Atkins, *The Periodic Kingdom*
- (j) "Carbon, one of the commonest substances on earth, is also one of the best understood. For in spite of the almost unfathomable complexity of the organic compounds it forms in living systems, carbon in its pure form has been studied for thousands of years. Until recently all the evidence suggested it forms only two basic structures, diamond and graphite. Thus to the modern chemist a continuing study of pure carbon would seem to offer little hope for excitement." – Richard Smalley; cited in Doug Walton, *Argument Structure*
- (k) There is a greater than 90 percent chance that you, the reader, are heterosexual. Think about how difficult it would be to feel sexually attracted to someone of your own sex and you will begin to understand how it is virtually impossible to create feelings that do not already exist. If it were a choice, as many proclaim, why would any intelligent person choose a way of life that exposes him or her to so much hostility,

prejudice and discrimination? Hormones are responsible, not human choices.” – Barbara and Allan Pease, *Why Men Don't Listen and Women Can't Read Maps*

- (l) “Germs and warfare are old allies. More than two millennia ago, Scythian archers dipped arrowheads in manure and rotting corpses to increase the deadliness of their weapons. Tatars in the fourteenth century hurled dead bodies foul with plague over the walls of enemy cities. British soldiers during the French and Indian War gave unfriendly tribes blankets sown with smallpox. The Germans in World War I spread glanders, a disease of horses, among the mounts of rival cavalries. The Japanese in World War II dropped fleas infected with plague on Chinese cities, killing hundreds and perhaps thousands of people.” – Judith Miller et al., *Germs: Biological Weapons and America's Secret War*
- (m) “America is special. It has built the most equal, tolerant, diverse and fair civilization in history.” – Margaret Wente, *The Globe and Mail*, September 7, 2002
- (n) “It is not uncommon for women to fall in love with their doctors, lawyers, therapists and religious counsellors. Catholic priests are the No. 1 target because they are available for consultation as part of their calling and are considered a safe haven for the troubled. Also, some women are attracted to priests because they are ‘forbidden fruit.’” – Ann Landers, *The Hamilton Spectator*, January 25, 2002
- (o) Passage (f) from exercise 1.46.
- (p) Passage (n) from exercise 1.46.
- (q) Passage (m) from exercise 2.59.
- (r) Passage (r) from exercise 2.59.
- (s) “Though the prosecution accepts that [James Colburn, a paranoid schizophrenic] is mentally ill, it argues he is fit to be executed because he can distinguish between right and wrong and understands that he is being punished for murdering . . . a 55-year old woman whom the prisoner stabbed and strangled in his apartment . . . near Houston, eight years ago.” – *The Hamilton Spectator*, November 5, 2002
- (t) “This miracle meets the requirements. It’s organic, permanent, immediate and intercessionary in nature.” – Bishop

Salvatore Lobo, cited in the August 27, 2001 issue of *Time*, commenting upon a miracle being attributed to Mother Teresa, exactly one year after her death, involving a woman whose abdominal tumor “vanished” after nuns started praying for her and placed a Mother Teresa medallion on her stomach.

- (u) “But I don’t think [Paul] Kane can be expected to have conveyed a realistic sense of the Native cultures he visited. He was essentially a tourist among the Indians. He spoke no Native languages; he had a superficial understanding of Native customs.” – Daniel Francis, *The Imaginary Indian*
- (v) “[James] Bond makes love like a girl. Whaaaaat?? Watch it for yourself. He flirts, he likes kissing necks and shoulders, he sometimes keeps his pyjamas on, he holds hands, he banters in bed, and he makes breakfast. Bond loves pleasure and beauty and softness, and he doesn’t just take these things; he offers them.” – Jeanette Winterson, *The Globe and Mail*, October 5, 2002

4.69 Locate an interesting, recently published argumentative text, and repeat exercise 4.68 employing that passage. Be sure to identify the source of your text.

Linkage

5.1 Linked Arguments

Not all arguments are convergent, because an argument may contain one or more premises that are not independently relevant to its conclusion. Consider (A), for example.

- (A) (1) The salad contains potatoes. (2) Potatoes are carcinogenic.
Therefore, (3) Hinal should not eat the salad.

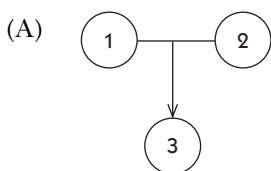
On the assumption that this is a two-premise normal argument, the author of (A) must believe that each of (1) and (2) plays an essential role in providing evidential support for (3). It's implausible, however, to suppose that the author believes that (2), for example, converges on (3). Proposition (2) makes a general (and eccentric) claim about potatoes, and (3) makes a claim about a particular salad without describing its composition. Although it's possible that the salad contains potatoes, it's also possible that it does not, and we have no reason to believe that either of these alternatives is more likely than the other. So it's unlikely that the author of (A) is claiming that (2) is independently relevant to (3). Furthermore, this individual can't be claiming that (2) is independently relevant to (3) on the presupposition that (1) is true, since by definition presuppositions are unexpressed propositions, and proposition (1) is obviously expressed in passage (A). Therefore, since (2) cannot plausibly be viewed as being independently relevant to (3), the author of (A) most likely understands (2) to be relevant to (3) in some

other fashion – on the assumption, once again, that (A) is a normal argument.

The most straightforward way, of course, to preserve (A)'s normality is to suppose that its author believes that (1) and (2) provide relevant support for (3), in this context, only if these propositions are considered *together*. Since this kind of evidential support can be provided by any finite number of propositions, it is best, in the interests of generality, to describe the (author's conception of the) microstructure of (A) by first defining a more generic notion that is not restricted to pairs of propositions.

We'll say that a set of premises *S* forms a *linked set*, with respect to some conclusion *C*, just in case each of the following three conditions obtains: (i) *S* contains at least two members; (ii) *S* is relevant to *C*; and (iii) no proper subset of *S* is relevant to *C*. Whenever *S* forms a linked set, we'll also say that the members of *S* are *linked* to one another. Finally, we'll say that an argument *A* is *linked* just in case (i) the premise set *S* of *A* is relevant to *A*'s conclusion *C*, and (ii) each premise within *S* is a member of some linked set, i.e., with respect to *C*. Argument (A), therefore, is (plausibly viewed as) a linked argument, the entire premise set of which is identical with a single, two-premise linked set. In (A), two distinct propositions (1) and (2) are linked to one another to provide a single bit of evidence in support of (3). In (A), two premises create one reason.

Accordingly, we'll diagram (A) as follows



where the “T” symbol connecting the diagram’s three nodes is to be viewed as a particular kind of relevance arrow, and is therefore, once again, a discrete symbol, no proper part of which has any representational content. This symbol represents the relationship of linkage between multiple premises and a single conclusion. Since we are following the convention of employing vertical lines to diagrammatically represent relevance relations, the linkage symbol contains only a single vertical line. Furthermore, that vertical line may never emerge directly

from any single node within a diagram, but must always originate from a horizontal line connecting individual nodes. Diagram (A), therefore, indicates clearly that no single premise is independently relevant to the conclusion of the depicted argument – as no vertical line emerges from either (1) or (2) – but that, taken together, the two premises provide a single reason in support of (and a single reason to believe) that conclusion.

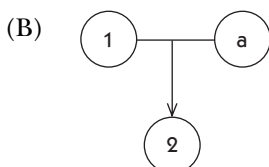
Linkage and convergence, therefore, represent two extreme cases of evidentiary support. In a convergent argument, *each* premise is independently relevant to the conclusion of that argument. So the number of reasons offered in support of the conclusion of a convergent argument always equals the number of premises within that argument. In a linked argument, by contrast, *no* premise is independently relevant to the conclusion of that argument. No reason is offered in support of the conclusion of a linked argument until all of the premises within some linked set are considered together; considered separately, or in any collection short of a linked set, the premises of a linked argument are irrelevant to the argument's conclusion. Therefore, since linked sets always contain at least two members, the number of reasons offered in support of the conclusion of a linked argument is always less than the number of premises within that argument, provided the linked sets within the argument are disjoint. And regardless of the propositional content of an argument's linked sets, the number of reasons offered within a linked argument always equals the number of linked sets within that argument.

Although every linked argument contains at least one linked set, and although each linked set contains at least two premises, it's possible for a linked argument to be expressed by a passage containing only a single explicitly asserted premise. By removing proposition (2) from passage (A), for example, we obtain the following passage.

- (B) (1) The salad contains potatoes. Therefore, (2) Hinal should not eat the salad.

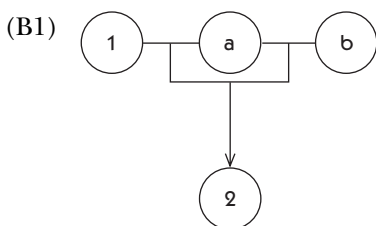
It's possible that (B) is intended to express a convergent argument. It's possible, that is, that the author of (B) believes that (1) is independently relevant to (2), relative of course to certain background pre-suppositions. But it's also possible that (B) is an enthymematic linked argument, and that the author of (B) is claiming that (2) follows, not

from (1) alone, but from (1) together with certain additional unexpressed premises. Perhaps the author of (B) is tacitly relying upon the sole proposition that (a) Hinal is a Jain. By incorporating lettered circles as additional nodes within argument diagrams, we can diagram this argument as follows.



Building upon a convention we introduced in Chapter 1, lettered nodes will be employed within diagrams to represent unexpressed premises or conclusions. Structurally, lettered nodes function in exactly the same manner as numbered nodes. So diagram (B) depicts an argument the premise set of which is identical to the single two-premise linked set composed of propositions (1) and (a).

Enthymematic arguments may of course contain more than one unexpressed component, and linked sets may contain more than two members. Passage (B), for example, might instead convey the argument depicted below



where, once again, proposition (a) is the claim that Hinal is a Jain, and proposition (b) is the claim that Jains are forbidden to eat potatoes. Since (B1) is a diagram of a single argument, it contains a single arrowhead. The various horizontal and vertical lines appearing above that arrowhead ought to be construed as a discrete stylistic variant of the “T” or linkage symbol, i.e., as, once again, a particular kind of relevance arrow. (In fact, for each $n > 2$, a slightly different stylistic variant must be employed to represent linked sets with n members.) So (B1) contains a single relevance arrow, and no vertical line

within (B1) emerges from any single node. Diagram (B1) therefore depicts an argument in which three linked premises, none of which are independently relevant to the argument's conclusion, provide a single reason in support of (and a single reason to believe) proposition (2). Clearly, given our definition of linked sets, diagrams (B) and (B1) make incompatible claims about which premises are relevant to proposition (2).

Each of the arguments depicted by diagrams (A), (B), and (B1) likely has a large number of presuppositions. That is, the authors of these arguments likely have, ready at hand, a large number of unexpressed background propositions they believe, and that they would invoke to justify the relevance and grounding claims of those arguments, should those claims be challenged. Diagrams (B) and (B1) also depict arguments with unexpressed premises. As noted in Chapter 4, it's a matter of considerable controversy how best to explain the difference between presuppositions and unexpressed premises. There is general agreement, however, that presuppositions play a more latent role in arguments. Presuppositions contribute significantly to the "framing" of any particular argumentative proposal, but arguers aren't likely to be conscious of that role when considering an argument's specific relevance or grounding claims. In (A), for example, it wouldn't likely make much sense to infer, from propositions (1) and (2), that Hinal should not eat the salad, without understanding that people are well-advised to avoid carcinogens. But that claim is so well-entrenched for most of us today that we're usually not disposed to consciously invoke it when working our way through an argument such as (A), or when assessing it for cogency.

In passage (B), by contrast, there is no evident connection, for most people, especially those who do not know Hinal, between the explicitly asserted propositions (1) and (2). So, in considering (B), most people would very likely invoke additional claims that would at least make sense of, if not fully justify, an inference from (1) to (2). If it's reasonable to suppose that the author of passage (B) expects her audience to supply this additional information, when assessing (B) for cogency, then it's reasonable to view those claims as unexpressed premises. Diagrams (B) and (B1) represent two different attempts to articulate the unexpressed propositional content of the argument

expressed within passage (B). Of course, the accuracy of these representations cannot properly be assessed without an examination of the context within which passage (B) is presented.

To be sure, this is only a very rough characterization of how presuppositions differ from unexpressed premises. But any theory of argument needs to work with something like this distinction. The relevance and grounding claims that appear within particular arguments typically rely upon a large number of background claims. However, if a premise is a proposition that is meant to be *employed* in the drawing of an inference, then it's not plausible that all of these claims are tacit premises. Often there are simply too many of them. Some must be, in our sense of the term, presuppositions. At the same time, it seems reasonable to believe that not all of an argument's premises must always be explicitly asserted. In particular, when an author's explicitly asserted premises bear no evident relation to her conclusion, it's often reasonable to suppose that she expects her audience to supply additional propositions that will enable them to draw an inference to the argument's conclusion. Since these propositions are meant to be used in the actual *drawing* of an inference, it's reasonable to view them as supplements to the argument's evidential base, i.e., it's reasonable to view these propositions as premises.

It follows that enthymematic convergent arguments, though possible, are far less common than enthymematic linked arguments. Since the explicitly asserted premises of a convergent argument are independently relevant to that argument's conclusion, one of the main motivations for introducing unexpressed premises into an argument – namely, to make sense of how an argument's premise set is relevant to its conclusion – is absent in the case of convergent arguments.

It also follows that the difference between premises and presuppositions often hinges upon the content of the epistemic state of (typical) audience members. A passage such as (B) may function without any unexpressed premises – and in this case would therefore function as a convergent argument – in a context in which, say, it's immediately obvious to audience members that (1) is relevant to (2). This could take place, for example, in an intimate familial setting, among Hinal's close relatives. But passage (B) might more plausibly be depicted by

diagram (B) in a more public setting where, although audience members believe and can be expected to recall and supply proposition (a), this would likely require some cognitive effort on their part. For some of Hinal's classmates, for example, the relevance of (1) to (2) within (B) might not be immediately obvious, although they could reasonably be expected to arrive on their own at an understanding that (1) and (a) together are relevant to (2). And passage (B) would express the argument depicted by diagram (B1) should the author of (B) be operating on the understanding that her audience will be able to appreciate the relevance of (1) to (2), once they remind themselves of the truth of propositions (a) and (b).

It would be silly, however, to pretend that we can draw a hard-and-fast distinction between premises and presuppositions. What's "immediately obvious" varies considerably from individual to individual, as does the amount of (conscious or unconscious) "cognitive effort" required to understand a relevance or grounding claim. Furthermore, even typical audience members might, on occasion, unexpectedly think long and hard about an argument's presuppositions. They might also ignore tacit premises when presented with an argument that appears, to them, to be ridiculous, threatening, or uninteresting. And authors may form eccentric expectations about, or place unreasonable demands upon, audience members. So there will be plenty of unusual cases over which we can expect uncertainty and rational disagreement.

Our main goal here, however, is to provide artists with the resources that will allow them to construct a wide variety of unambiguous graphic representations of the possible microstructure of any of the various arguments they might encounter. If artists can understand and express clearly a broad range of interpretational options open to them, they'll be in a better position to settle upon a fair and reasonable reading of any given argumentative passage. The only point upon which we will insist is that, relative to any particular context, the premises and presuppositions of an argument must form disjoint sets. Beyond that, our diagrammatic apparatus is compatible with any number of different conceptions of how the line between presuppositions and unexpressed premises should be drawn. Most generally, from a practical point of view, as listeners we will be satisfied if, as in Chapter 1, we are able to arrive at a macro- and microstructural interpretation of

an author's argument that she would endorse as a fair and accurate representation of her argument, were she in a position to peruse and understand it.

EXERCISES

- 5.1 Prove that no linked argument is convergent.
- 5.2 Prove that no convergent argument is linked.
- 5.3 Prove that every linked argument contains at least one linked set.
- 5.4 Suppose we eliminated clause (i) from our definition of a linked set. Then how many linked sets, if any, would exist within an n -premise convergent argument?
- 5.5 Explain why clause (iii) of our definition of a linked set refers to *proper* subsets.
- 5.6 Explain why diagrams (B) and (B1) make incompatible claims about relevance relations.
- 5.7 Can a linked argument A contain a premise that is independently relevant to A 's conclusion? If so, illustrate your answer with an example. If not, explain why not.
- 5.8 Can a linked argument A contain exactly one (i.e., one, but no more than one) premise that is not independently relevant to A 's conclusion? If so, illustrate your answer with an example. If not, explain why not.
- 5.9 Prove that the number of reasons offered in support of the conclusion of a linked argument equals the number of linked sets within that argument.
- 5.10 Construct and diagram a four-premise linked argument containing a single linked set. Justify your answer.
- 5.11 For each of the arguments depicted by diagrams (A), (B), and (B1), identify at least ten presuppositions of that argument.
- 5.12 For each of the following passages, describe a set of conditions under which someone might plausibly present this passage as (i) a single linked argument; (ii) a single convergent argument; and (iii) two separate convergent arguments. In each case, state which beliefs you are attributing to the argument's author.

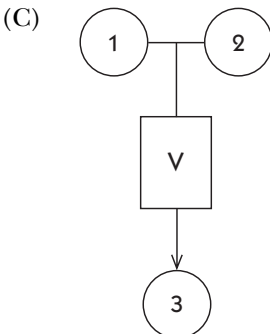
- (a) (1) Polly is pertinacious. (2) Polly is promiscuous. So (3) you shouldn't invite Polly to the party.
 - (b) Substance S contains sodium. (2) Substance S contains chlorine. So (3) S will destroy the microorganism.
 - (c) (1) *Goldfinger* is a violent film. (2) *Goldfinger* contains sexually explicit material. So (3) admission to *Goldfinger* should be restricted.
 - (d) (1) The next show stars Twiggy. (2) Bing Crosby is featured in the soundtrack of the next show. So (3) the next show would be worth seeing.
- 5.13 Is it possible for a normal author to present what she believes to be a linked argument *A*, where *A*'s premise set is actually irrelevant to *A*'s conclusion? If so, illustrate your answer with an example. If not, explain why not.
- 5.14 Is it possible for a normal author to present what she believes to be a linked argument *A*, where each premise within *A*'s premise set actually converges on *A*'s conclusion? If so, illustrate your answer with an example. If not, explain why not.

5.2 Structural Options

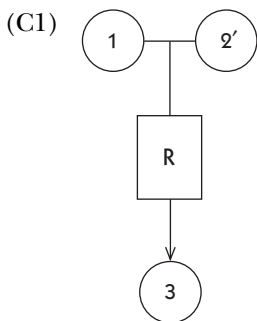
Linked arguments can exhibit even more structural diversity than convergent arguments. To begin with, different linked arguments may of course make different grounding claims. The following passage

- (C) (1) Val is a Virgo. (2) All Virgos are vegans. So (3) Val is a vegan.

expresses a valid linked argument, and may be diagrammed as follows:



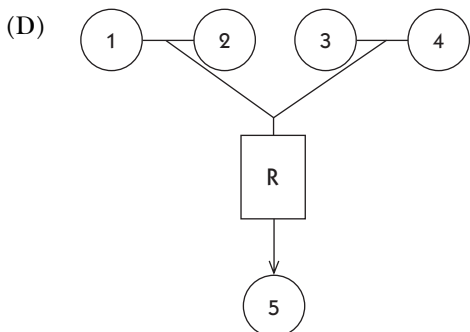
Substituting “most” for “all” in passage (C) would result in a significantly different linked premise (2′) and a merely reliable argument, the diagram of which appears below.



Second, a linked argument may contain more than one linked set. In passage (D), for example,

- (D) (1) Val is a Virgo. (2) Many Virgos are vegans. Furthermore, (3) Val won’t eat eggs, and (4) many people who won’t eat eggs are vegans. So it’s likely that (5) Val is a vegan.

(1) and (2), when linked, provide a reason in support of (5); and (3) and (4), when linked, also provide a reason in support of (5). However, neither of these reasons supports a reliable inference to (5). Therefore, it’s charitable to construe (D) as expressing a linked argument where the two reasons provided by the two separate linked sets are first pooled before drawing an inference in support of the argument’s conclusion.



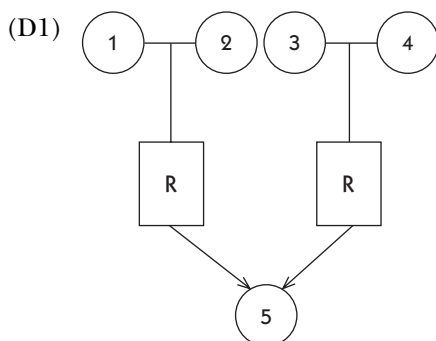
In this, as in most cases, the pooled evidence provides more support for (5) than does any linked set on its own. On the assumption that the

author of (D) is normal, our diagram attributes to her the belief that her argument is reliable. Whether it *is* reliable is, of course, another question.

Passage (D) should not be confused with the verbally similar but structurally more ambiguous passage

(D1) (1) Val is a Virgo. (2) Most Virgos are vegans. Furthermore, (3) Val won't eat eggs, and (4) most people who won't eat eggs are vegans. So it's likely that (5) Val is a vegan.

Passage (D1) might accurately be depicted by diagram (D). However, since each linked set within (D1) supports a reliable inference to the argument's conclusion, that passage might also be construed as offering two separate reasons to believe proposition (5).

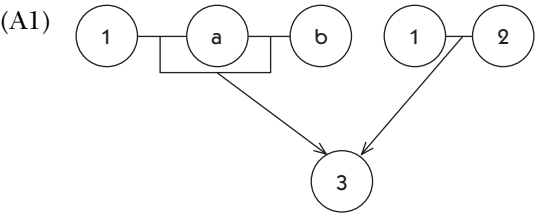


Whether passage (D1) ought to be depicted by diagram (D) or diagram (D1) will depend upon familiar charitable considerations which we won't reiterate here. What matters at this point is just that (D) is a single diagram of a single four-premise linked argument, with two pooled bits of evidence each of which emerges from a separate linked set; whereas (D1) is a single diagram of two separate two-premise linked arguments, each offering one bit of evidence emerging from a single linked set.

Diagram (D1) also illustrates the fact that different linked arguments can share propositional parts. In this case, proposition (5) is the shared conclusion of two separate linked arguments. It's possible for linked arguments to share premises as well. Consider the following very slight variant of passage (A).

(A1) (1) The salad contains potatoes. Besides, (2) potatoes are carcinogenic. So (3) Hinal should not eat the salad.

Now, suppose that the author of (A1) expects her audience to supply two unexpressed premises to the effect that (a) Hinal is a Jain, and (b) Jains are forbidden to eat potatoes. This author has then likely provided two separate reasons in support of proposition (3). Passage (A1) might accordingly be construed as offering either two separate linked arguments



or a single linked argument with two pooled bits of evidence.

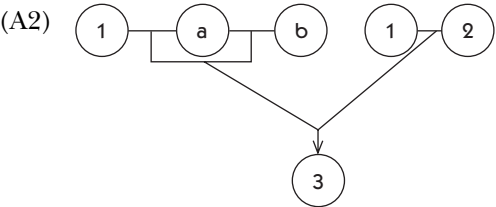


Diagram (A1) illustrates how a single premise may be shared between two linked arguments also sharing the same conclusion. Diagram (A2) illustrates how a single premise may play more than one role within a single linked argument – something not possible in the case of convergent arguments – by being a member of more than one of that argument’s linked sets. And both diagrams illustrate how different linked sets in support of the same conclusion may contain different numbers of premises.

Although proposition (1) plays a dual role in either reading of passage (A1), we won’t permit diagrams that fuse a node shared by two (or more) linked sets, since this might easily lead to confusion over the nature of linked sets. In (A2), for example, the set $\{(1), (a), (b), (2)\}$ is *not* a linked set, with respect to proposition (3), as it contains at

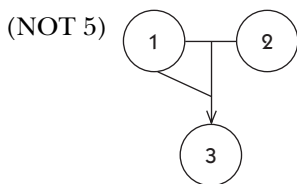
least one proper subset that is relevant to (3). Therefore, we want to avoid any diagrammatic convention that might suggest, in any way, that these four propositions ought to be grouped together.

Similarly, although it's permissible to *pool* the evidence arising from linked sets that, as in diagram (D), share no common member, it would be a mistake to *link* all the premises within any such argument. Propositions (1) through (4) do not form a linked set within (D), with respect to proposition (5), because, for example, propositions (1) and (2) alone form such a set.

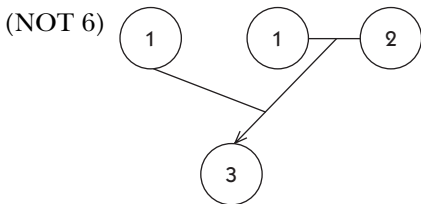
These points about linked sets are important because, if we fail to understand them, we can easily be misled into constructing incoherent diagrams. It's easy to think, for example, that passage (E)

(E) (1) Val is a vegetarian. (2) All vegetarians are vegans. So (3) Val is a vegan.

expresses a linked argument, as syntactically it's so similar to passage (C). However, it's also not difficult to imagine contexts in which proposition (1) within (E) would be independently relevant to proposition (3). Suppose you know nothing about Val. Then you'll probably assign a very low antecedent probability to the proposition that she is a vegan, since vegans constitute a very small proportion of the planet's population. But that probability would very likely increase should you discover that Val is a vegetarian. If so, then, for you, (1) would become independently relevant to (3). (By contrast, using this same test within passage (C), proposition (1) is probably not independently relevant, for you, to proposition (3).) So one might be inclined to conclude that passage (E) has features of both a linked and a convergent argument. However, were you to diagram (E) as follows, with a relevance arrow emerging directly from a node that is also connected by the linkage symbol to another node,



or, as follows, where a convergent node is repeated as a member of a linked set,



then you would be attributing inconsistent beliefs to the author of (E). You would be attributing to her the belief that (1) is independently relevant to (3), as well as the belief that (1) and (2) form a linked set – a proposition entailing that neither (1) nor (2) is independently relevant to (3).

Since normal authors, by definition, hold consistent beliefs about the cogency of their own arguments, and since, having adopted the normality assumption, we're interested in diagramming the arguments of normal authors, we won't permit diagrams of this sort as graphic depictions of normal arguments.

It's possible that passage (E) expresses a linked argument. But if any normal author of that passage believes that (1) and (2) are linked, then for reasons of consistency she must *deny* that (1) converges on (3). If, however, she believes that (1) converges on (3), then for reasons of consistency she must *deny* that proposition (1) is a member of any linked set within this argument. It follows, on this latter supposition, that she must also deny that (E) expresses a linked argument.

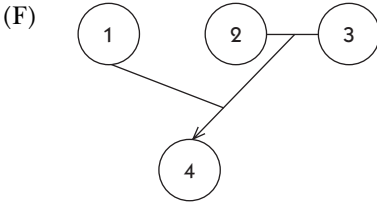
Suppose that, within a certain context, you believe that (1) is independently relevant to (3) within (E). Then you cannot employ (E) to express a linked argument, within that context. And since it's implausible to claim that (2) is independently relevant to (3) within (E), it follows that the argument in question is not convergent either. So not all arguments are either linked or convergent. In the [next chapter](#), we'll see how an author can coherently employ passage (E) to express yet a different kind of argument, while viewing proposition (1), but not proposition (2), as a convergent premise.

It's not necessary, however, to invoke a new type of evidentiary relation in order to prove that not all arguments are either linked or

convergent. In the following passage

- (F) (1) Val is a vegetarian. (2) Val is a Virgo. (3) Many Virgos are vegans. So (4) Val is a vegan.

it's arguable that (1) converges on (4), and that (2) and (3) form a linked set with respect to (4). By pooling the evidence in support of (4) as follows

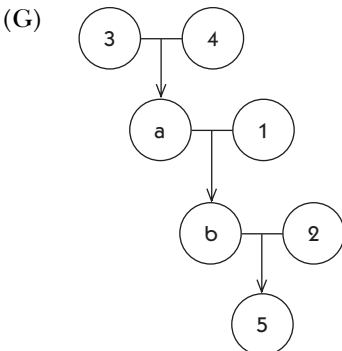


we can create a single argument that is neither linked (since not every premise is a member of some linked set) nor convergent (since not every premise is independently relevant to the argument's conclusion).

Finally, linked arguments can also share propositional parts within serial arguments. Passage (G), for example,

- (G) (1) The salad contains potatoes. Therefore, since (2) Hinal is a Jain, and since (3) Jains are forbidden to eat root vegetables and (4) the potato is a root vegetable, (5) Hinal should not eat the salad.

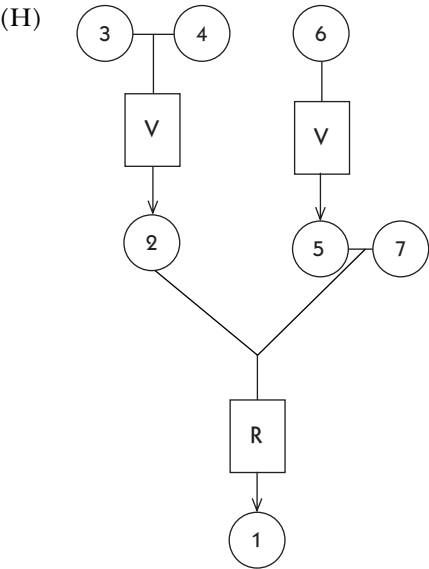
can be diagrammed as follows



where proposition (a) is the claim that Jains are forbidden to eat potatoes, and proposition (b) is the claim that Jains are forbidden to eat the salad. (G) is a single diagram of three separate linked arguments, where each of the unexpressed propositional components serves both as the conclusion of one linked argument, and as one of the premises of some other linked argument. And passage (H)

(H) (1) Val is probably a vegan. Look, (2) she's got to be a vegetarian since (3) vegetarians don't eat meat and (4) Val refuses to eat meat. Besides, we know that (5) she's a Virgo since (6) she was born on the last day of August. And (7) many Virgos are vegans.

which can be diagrammed as follows



expresses one valid two-premise linked argument, one valid single-premise convergent argument, and one three-premise argument that is neither linked nor convergent but that is claimed by its author to be reliable. Proposition (2) serves both as the conclusion of the linked argument and as a convergent premise in support of proposition (1). And proposition (5) serves both as a member of a linked set offered in support of proposition (1), and as the conclusion of the diagram's convergent argument.

EXERCISES

- 5.15 Does diagram (D) depict a reliable argument? Justify your answer.
- 5.16 Is the lowermost argument depicted in diagram (H) reliable? Justify your answer.
- 5.17 Do you believe that proposition (1) is independently relevant to proposition (3) within passage (E)? Justify your answer.
- 5.18 Repeat exercise 5.17, this time with respect to passage (C).
- 5.19 Explain why diagrams (G) and (H) depict serial arguments.
- 5.20 Would you feel confident adding any modalities to diagram (G)? If so, construct and justify a modal diagram of argument (G). If not, explain why not.
- 5.21 Is it possible for a non-convergent argument to contain a convergent premise? If so, explain how this is possible and illustrate your answer with an example. If not, explain why not.
- 5.22 Is it possible for a non-linked argument to contain a linked set? If so, explain how this is possible and illustrate your answer with an example. If not, explain why not.
- 5.23 Roll a fair die twice to obtain an ordered pair $\langle m, n \rangle$. Construct and diagram a linked argument with m linked sets, each of which contains n premises. (If $n = 1$, then roll again.)
- 5.24 Construct and diagram a linked argument containing three disjoint linked sets, where the linked sets contain two, three, and four members respectively.
- 5.25 Roll a fair die twice to obtain an ordered pair $\langle m, n \rangle$. Construct and diagram a linked argument in which each of the argument's m linked sets share the same n premises. (Recall that two sets are identical just in case they contain exactly the same members.)
- 5.26 Construct a valid argument with 32 premises about the month of December, where the first premise forms a linked set with *each* of the remaining 31 premises; that is, the argument's premise set consists of 31 linked sets. (Find a way of describing the argument's premises without writing them all down.) Justify your answer.
- 5.27 Roll a fair die to obtain a number n . Construct and diagram an n -premise convergent argument about the seven deadly sins – pride, greed, lust, anger, gluttony, envy, and sloth.

- 5.28 Roll a fair die twice to obtain an ordered pair $\langle m, n \rangle$, where $m < n$. Construct and diagram an n -premise linked argument about the seven deadly sins that offers m reasons in support of the argument's conclusion. (If $n = 1$, then roll again.) If it's not possible to complete this exercise with the ordered pair you have rolled, explain why.
- 5.29 Repeat exercise 5.28, where $m = n$.
- 5.30 Repeat exercise 5.28, where $m > n$.
- 5.31 Is it possible for one linked set S to be relevant to proposition (1) within one argument, and for another linked set S' to be relevant to (1) within some other argument, but for the two reasons associated with these sets, once pooled, to be irrelevant to (1)? If so, illustrate your answer with an example. If not, explain why not.
- 5.32 Is it possible for one linked set S to reliably support proposition (1) within one argument, and for another linked set S' to reliably support (1) within some other argument, but for the two reasons associated with these sets, once pooled, to be irrelevant to (1)? If so, illustrate your answer with an example. If not, explain why not.
- 5.33 Repeat exercise 5.32, this time requiring that the two pooled reasons together provide relevant but unreliable support for (1).
- 5.34 Explain how it's possible that an argument A could fail to be linked, even though each premise within A is a member of some linked set with respect to A 's conclusion. Illustrate your answer with an example, and determine whether your argument is compact.
- 5.35 How would our account of linked arguments differ, were we to remove clause (i) from the definition of linked arguments offered at the beginning of this chapter?
- 5.36 On the assumption that each of the following passages expresses at least one normal (linked or convergent) argument, identify the macrostructure and construct a diagram of that argument. Employ modalities to the extent that you feel confident in doing so. Identify any noteworthy presuppositions of the arguments in question, and justify your diagrams as you see fit.

- (a) "Hence also it is no easy task to be good. For in everything it is no easy task to find the middle." – Aristotle, *Nicomachean Ethics*
- (b) "Venus and Mercury must revolve around the sun, because of their never moving far away from it, and because of their being seen now beyond it and now on this side of it." – Galileo, *Dialogues Concerning Two Chief World Systems*
- (c) "Obesity is either genetic or environmental. Obesity is not genetic. Therefore, obesity is environmental." – An example from Trudy Govier, *A Practical Study of Argument*
- (d) "It is plain why our Lord did not say to Martha that Mary hath chosen the best 'life' for there are only two lives, and no one can choose the best of two." – *The Cloud of Unknowing*
- (e) "Madeleine's heart sank. Nemoto would be hard to deal with rationally. People with missions always were." – Stephen Baxter, *Manifold: Space*
- (f) "Now I learned that K-PAX was circled by seven purple moons. 'Your planet must be a very romantic place,' I prodded." – Gene Brewer, *K-PAX*
- (g) "Furthermore, if he *was* a savant, he was an *intelligent, amnesiacal, delusional* one. This was absolutely extraordinary, an entirely new phenomenon." – Gene Brewer, *K-PAX*
- (h) "'I thought,' Maura said doggedly, 'teleportation was impossible. Because you would need to map the position and velocity of every particle making up the artifact you want to transmit. And that violates the uncertainty principle, the notion that, because of quantum fuzziness, it was impossible to map precisely the position and momentum of a particle.'" – Stephen Baxter, *Manifold: Space*
- (i) "Holes are not just regions of space; holes can move, as happens anytime you move a piece of Emmenthal cheese, whereas regions of space cannot." – Roberto Casati and Achille Varzi, *Holes*
- (j) "Achilles killed with his own hands. Since that was a very stupid thing to do, and Achilles did not test stupid, it had to be an irresistible compulsion. People with irresistible compulsions could . . . be beaten." – Orson Scott Card, *Shadow of the Hegemon*

- (k) Passage (K) from Chapter 1.
- (l) “Not everything has a smell: only substances volatile enough to spray microscopic particles into the air.” – Diane Ackerman, *A Natural History of the Senses*
- (m) “Just what do we mean by a bad smell? And what is the worst smell in the world? The answers depend on culture, age and personal taste. Westerners find fecal smells repulsive, but the Masai like to dress their hair with cow dung, which gives it an orangey-brown glow and a powerful odor.” – Diane Ackerman, *A Natural History of the Senses*
- (n) “Females score higher than males in sensitivity to odors, regardless of age group. For a time scientists thought estrogen might be involved . . . but as it turned out prepubescent girls were better sniffers than boys their age, and pregnant women were no more adept at smelling than other women.” – Diane Ackerman, *A Natural History of the Senses*
- (o) “Not all [mutational] misplacements of parts represent homeosis . . . William Bateson, who later invented the term genetics, defined as ‘homeotic’ only those parts that replace an organ having the same developmental or evolutionary origin. . . . We might refer to homeosis if a human developed a second pair of arms where his legs should be, but an extra pair of arms on the chest would not qualify.” – Stephen Jay Gould, *Hen’s Teeth and Horse’s Toes*
- (p) “Postal deliveries in Holland are not perfect. You cannot be sure that a letter will be delivered next day, nor that it will be delivered to the right address.” – An example from Francisca Snoeck Henkemans, *Analysing Complex Argumentation*
- (q) “She is extremely fickle. One moment she says she hates children, and the next moment she says she’s sorry she never had a child. Last week she said she never wanted to see me again, and today she called me to ask why I never came by anymore.” – An example from Francisca Snoeck Henkemans, *Analysing Complex Argumentation*.
- (r) “John’s fingerprints were all over the gun. Hence it must be that he committed the murder. But from this we may suspect that his motive was revenge. Now, frequently those

who commit murder for revenge are remorseful over their deeds. So possibly John will express remorse over the murder.” – An example from James Freeman, *Thinking Logically*

- (s) “Harry Potter was a highly unusual boy in many ways. For one thing, he hated the summer holidays more than any other time of the year. For another, he really wanted to do his homework, but was forced to do it in secret, in the dead of night. And he also happened to be a wizard.” – J. K. Rowling, *Harry Potter and the Prisoner of Azkaban*
- (t) “Our father didn’t do anything. He worked in an office, not in a drugstore. Atticus did not drive a dump-truck for the county, he was not the sheriff, he did not farm, work in a garage, or do anything that could possibly arouse the admiration of anyone.” – Harper Lee, *To Kill a Mockingbird*
- (u) “The upshot of this discussion, then, is that foundational propositions must be self-evident. But there are no grounds for believing that there exists a body of self-evident propositions that will allow us to justify substantive beliefs, and foundationalism fails. Moreover, if, as I argued at the beginning of this chapter, the classical model of rationality requires a foundational epistemology, the classical model fails too: without self-evident foundational propositions, we cannot actually arrive at any rational beliefs.” – Harold Brown, *Rationality*
- (v) “Moncton is the official Tim Horton’s capital of Canada, with one franchise outlet for every 4,400 residents. But the Maritimes is remarkably loyal overall. Consider this: New Brunswick, Nova Scotia and Prince Edward Island have 380 Tim Horton’s outlets between them. That’s almost 20 per cent of all the stores in Canada, in an area with only 5 per cent of the country’s population.” – *The Hamilton Spectator*, November 2, 2002
- (w) “Our wants for our children are very inconsistent. While we are anxious on the one hand that they fit as smoothly as possible into the social grooves society has prepared, we also want them to be ‘creative.’” – Elise Boulding, *One Small Plot of Heaven*

- (x) “This process of dialoguing with a person to find a basis for relationship, not agreement or consensus but simply a basis for relationship, is a widely practiced ritual in many parts of the world. Oddly enough, we have lost it in industrial society. Therefore we have enemies.” – Elise Boulding, *One Small Plot of Heaven*
- (y) “He had heard that women often did care for ugly and ordinary men, but he did not believe it, for he judged by himself, and he could not himself have loved any but beautiful, mysterious, and exceptional women.” – Leo Tolstoy, *Anna Karenina*
- (z) “Both of them now had only one thought – the illness of Nikolai and the nearness of his death – which stifled all else. But neither of them dared to speak of it, and so whatever they said – not uttering the one thought that filled their minds – was all falsehood.” – Leo Tolstoy, *Anna Karenina*

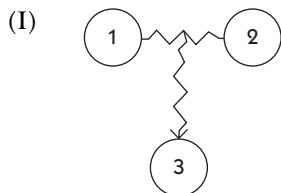
5.3 Vulnerable Arguments

Many arguments are neither linked nor convergent. By definition, any argument that is either linked or convergent contains a premise set relevant to that argument’s conclusion. Therefore, no argument that contains a premise set that is irrelevant to its conclusion can be either linked or convergent. Relations of linkage and convergence constitute two different ways in which premises can provide relevant support for their respective conclusions, and so a premise set that provides *no* such support cannot exhibit any particular *type* of support.

A normal author may, however, present an argument with an irrelevant premise set in the (mistaken) conviction that her argument is cogent. And she may also (mistakenly) believe that that argument is either linked or convergent. Therefore, in diagramming the structure of any such normal argument, as it is conceived by its author, an artist must ensure that each of the argument’s premises is connected to the argument’s conclusion by an appropriate type of relevance arrow.

An artist may of course record her disagreement with an author’s argumentative claims through the optional employment of squiggly symbols, and we now add to the stock of these symbols by allowing a

squiggly linkage symbol to be used to record disagreement with any of an author's claims about linked sets. Squiggly diagram (I), for example,



records an artist's bare denial of the claim that (1) and (2) are linked, without making any positive claim about whether and, if so, how (1) and (2) are relevant to (3) in some other manner. Since the linkage symbol is a particular kind of relevance arrow, all of the conventions introduced earlier regarding the construction of diagrams with squiggly arrows apply to the employment of the squiggly linkage symbol as well.

Although the premise sets of linked and convergent arguments necessarily provide relevant support for their respective conclusions, in one important sense that support is conditional upon the acceptability of the argument's premises. Recall that a proposition (1) is relevant to a proposition (2) just in case (1), *if true*, provides evidence in support of (2). Therefore, it's possible for a false proposition (1) to be relevant to a (true or false) proposition (2). However, that relevant support should not increase your confidence that (2) is true, unless it's rational for you to believe that (1) is true. Similarly, if propositions (1) and (2) form a linked set with respect to proposition (3), then (1) and (2), *if both true*, provide evidence in support of (3). Therefore, it's possible for a linked set containing false propositions to provide relevant support for a (true or false) proposition (3). However, that relevant support should not increase your confidence that (3) is true, unless it's rational for you to believe, of both (1) and (2), that they are true. Relevant support, therefore, does not contribute to the process of *rational persuasion* unless it's predicated upon information that itself serves, within the appropriate context, as an object of rational belief.

Linked and convergent arguments, when viewed as instruments of rational persuasion, are of course subject to this general limitation. The relevant support that their premise sets, by definition, offer their respective conclusions – no matter how strong that support may be – will not rationally persuade audience members who challenge the

truth of the propositions within those premise sets. And despite their structural differences, linked and convergent arguments are vulnerable to these challenges in remarkably similar ways.

We can explore this similarity more precisely by defining three additional properties of arguments as follows. We'll say that an argument *A* is *vulnerable* just in case both (i) the premise set *S* of *A* is relevant to *A*'s conclusion *C*, and (ii) there is *at least one* premise *P* within *S* such that the elimination of *P* from *S* would destroy all relevant support for *C*. We'll say that an argument *A* is *hypervulnerable* just in case, as before, clause (i) obtains, and (ii) the elimination of *any* single premise *P* from *S* would destroy all relevant support for *C*. And finally we'll say that an argument *A* is *invulnerable* just in case, as before, clause (i) obtains, and (ii) there is *no* single premise *P* within *S* such that the elimination of *P* from *S* would destroy all relevant support for *C*.

Regarding these definitions, three points of clarification are in order. First, clause (i) of each definition is satisfied trivially by any linked or convergent argument. Second, as the name suggests, hypervulnerability is but one special case of vulnerability, and so every hypervulnerable argument is vulnerable, but not every vulnerable argument is hypervulnerable. When we specifically want to refer to an argument that is vulnerable but not hypervulnerable, we'll speak of an argument that is *merely* vulnerable. Third, by "eliminating" or literally removing a single premise from an *n*-premise set *S*, we create a *zapped* premise set *S'* containing *n* – 1 members; where *S'* is just one of *n* possible zapped premise sets that could be derived from *S*. Elimination is the set-theoretic operation that most closely corresponds to our diagrammatic device of drawing a squiggly circle around a premise. If a premise has literally been removed from an argument, then it is no longer available (on that occasion) as an object of rational belief. And if it's not rational for someone to believe that a certain premise is true, then, for all intents and purposes, that premise has been eliminated as an effective tool of rational persuasion.

Vulnerable arguments, by definition, offer relevant support for their conclusions, but that support can be abolished altogether with one fatal blow dealt some particular premise. That is, if an argument *A* is vulnerable in virtue of some premise *P*, then *A* fails, as an instrument of rational persuasion, to provide you with *any* evidence in support of its conclusion, should it be the case either that *P* is literally withdrawn

or eliminated from A , or that it's not rational for you to believe that P is true.

In the case of convergent arguments, the property of vulnerability can easily be read off argument diagrams simply by counting the number of relevance arrows within those diagrams. Every convergent argument with exactly one premise is vulnerable, and also hypervulnerable, since any such argument offers only one bit of relevant information in support of its conclusion; and any diagram of a single-premise convergent argument will contain a single relevance arrow. But every convergent argument with two or more premises is invulnerable, and any diagram of such an argument will contain at least two relevance arrows. It follows that no convergent argument with two or more premises is either hypervulnerable or merely vulnerable, and that in fact no convergent argument whatsoever is merely vulnerable.

Not surprisingly, with respect to argument vulnerability, linked arguments with n linked sets behave just like n -premise convergent arguments, provided each of the linked sets under consideration is disjoint. That is, any linked argument containing a single linked set (of any size) is vulnerable, and also hypervulnerable, since the one bit of relevant information that that argument provides in support of its conclusion would be destroyed, as rationally persuasive evidence, should it not be rational for you to believe any single proposition within that linked set; and any diagram of an argument containing a single linked set will contain a single relevance arrow. But no linked argument containing two or more disjoint linked sets will be vulnerable or hypervulnerable, and any diagram of such an argument will contain at least two relevance arrows.

Therefore, any argument that is diagramed with a single relevance arrow is both vulnerable and hypervulnerable. The presence of two or more relevance arrows, however, does not guarantee that the argument being diagramed is invulnerable. An argument with two or more linked sets will be diagramed using two or more relevance arrows. If, however, there is some premise P that is shared by *each* linked set within that argument, then that argument is vulnerable. Therefore, in the case of linked arguments with more than one linked set, vulnerability assessments cannot simply be read off argument diagrams without attending to the propositional content of the uppermost nodes within those diagrams.

On grounds of charity, other things being equal, invulnerable arguments are to be preferred over vulnerable arguments, and merely vulnerable arguments are to be preferred over hypervulnerable arguments. Suppose that it's not rational for you to believe some premise P of some argument A in support of conclusion C (but that you hold true, rational beliefs about A 's structural properties). It follows that A cannot be cogent for you. However, if A is hypervulnerable, then, since no zapped premise set of A provides any relevant support for C , an entire class of arguments closely related to A must also fail to be cogent for you. But if A is merely vulnerable, then there remains a possibility that A , without P , still provides some relevant support for C , and therefore there remains some prospect that some argument closely related to A could be cogent for you. Finally, if A is invulnerable, then it is certain that A , without P , still provides some relevant support for C , and thus there remains a greater prospect that some argument closely related to A might still be cogent for you.

There are, therefore, two general reasons in favor of pooling premises, whenever this is compatible with the available linguistic and contextual evidence. First, pooled premises usually yield a stronger grounding relation. And second, an argument with pooled premises is usually invulnerable.

EXERCISES

- 5.37 Prove that no convergent argument contains a single premise that is altogether irrelevant to its conclusion.
- 5.38 Prove that no linked argument contains a single premise that is altogether irrelevant to its conclusion.
- 5.39 Identify four reasons why an argument may be neither linked nor convergent.
- 5.40 Is it possible for a linked or a convergent argument to be non-compact? If so, illustrate your answer with an example. If not, explain why not.
- 5.41 Provide a definition of the property of compactness, for two-premise arguments, that is equivalent to the definition offered in Chapter 2, using the notion of a zapped premise set. Prove that the two definitions are equivalent, in the sense that they pick out the same class of arguments.

- 5.42 Repeat exercise 5.41, defining compactness for three-premise arguments.
- 5.43 Prove that every hypervulnerable argument is vulnerable.
- 5.44 Prove that every convergent argument with two or more premises is invulnerable.
- 5.45 Prove that no convergent argument is merely vulnerable.
- 5.46 Prove that no non-compact argument is hypervulnerable.
- 5.47 Prove that no linked argument containing two or more disjoint linked sets is vulnerable.
- 5.48 Construct a vulnerable, linked argument containing at least two linked sets.
- 5.49 Can there be an invulnerable, linked argument containing a premise that is shared by two or more linked sets? If so, illustrate your answer with an example. If not, explain why not.
- 5.50 Roll a fair die to obtain a number n . Construct a vulnerable, linked argument containing n linked sets. Is your argument hypervulnerable? Justify your answer.
- 5.51 Prove that no linked argument containing two or more linked sets is hypervulnerable.
- 5.52 Construct an example of each of the following argument types.
- (a) a convergent, valid, hypervulnerable argument
 - (b) a convergent, valid, invulnerable argument
 - (c) a convergent, reliable, hypervulnerable argument
 - (d) a convergent, reliable, invulnerable argument
 - (e) a linked, valid, merely vulnerable argument
 - (f) a linked, valid, hypervulnerable argument
 - (g) a linked, valid, invulnerable argument
 - (h) a linked, reliable, merely vulnerable argument
 - (i) a linked, reliable, hypervulnerable argument
 - (j) a linked, reliable, invulnerable argument
- 5.53 (a) For each valid argument you constructed in exercise 5.52, determine whether any zapped premise set of that argument still validly supports the argument's conclusion.
- (b) For each reliable argument you constructed in exercise 5.52, determine whether any zapped premise set of that argument still reliably supports the argument's conclusion.

- 5.54 Suppose that argument *A*'s premise set is irrelevant to *A*'s conclusion. Is *A* either vulnerable or hypervulnerable? Justify your answer.
- 5.55 Is it possible for a non-compact, one-premise argument to be invulnerable? If so, illustrate your answer with an example. If not, explain why not.
- 5.56 Is it possible that some zapped premise set of an invulnerable argument *A* could provide greater support for *A*'s conclusion, than is provided by the premise set of *A*? If so, illustrate your answer with an example. If not, explain why not.
- 5.57 Let's say that an argument *A* possesses the property of *second-order vulnerability* just in case both (i) *A*'s premise set *S* is relevant to *A*'s conclusion *C*, and (ii) at least *two* premises must be eliminated from *S* in order to destroy all relevant support for *C*. Now, define analogous notions of *second-order invulnerability*, *second-order hypervulnerability*, and *second-order mere vulnerability*, and repeat exercise 5.52, in each case constructing arguments with the appropriate second-order properties.
- 5.58 Is it possible for a second-order merely vulnerable argument to be convergent? If so, construct a valid and a reliable example of such an argument. If not, explain why not.

5.4 Relational Vulnerability

Many arguments, including many invulnerable arguments, are nonetheless still subject to a different sort of vulnerability pertaining to grounding rather than relevance relations. Recall that there are two basic grounding relations. Every grounded argument is either valid or reliable. We'll say that a *grounding relation* (rather than an argument) within an argument *A* is *vulnerable* just in case there is at least one premise *P* within *A* such that the elimination of *P* from *A* would destroy – and, more specifically, weaken – whatever particular type of grounding relation obtains within *A*. So a valid (reliable) grounding relation within an argument *A* is vulnerable just in case there is at least one premise *P* within *A* such that the elimination of *P* from *A* would transform *A* into an invalid (unreliable) argument – or, alternatively, just in case at least one of *A*'s zapped premise sets fails to validly (reliably) support *A*'s conclusion. (Notice, however, that a

reliable argument *A* may fail to contain a vulnerable grounding relation even if the elimination of some premise *P* from *A* would transform *A* into a *valid* argument. That is, for the purposes of this discussion, we'll ignore cases in which the removal of a premise from *A* would transform *A* into an argument with a *stronger* type of grounding relation.) An argument's grounding relation is *invulnerable* just in case it is not vulnerable.

We'll also say, not unexpectedly, that a grounding relation within an argument *A* is *hypervulnerable* just in case the elimination of *any* single premise *P* from *A* would destroy whatever particular grounding relation obtains within *A*. Clearly, every hypervulnerable grounding relation is vulnerable, since (what we'll call) *relational* hypervulnerability is but one special case of *relational* vulnerability; but not every vulnerable grounding relation is hypervulnerable. When we want to refer to a grounding relation that is vulnerable but not hypervulnerable, we'll speak of a grounding relation which is *merely* vulnerable.

Obviously, since no unreliable argument contains a grounding relation, no unreliable argument (whether it is invulnerable, merely vulnerable, or hypervulnerable) will contain either an invulnerable, a merely vulnerable, or a hypervulnerable grounding relation.

Other things being equal, arguments with invulnerable grounding relations are to be preferred over arguments with vulnerable grounding relations; and arguments with merely vulnerable grounding relations are to be preferred over arguments with hypervulnerable grounding relations. We're making these recommendations, once again, under the rubric of the principle of charity – in our ongoing attempt, that is, to articulate some of the many conditions that factor into our understanding of the complex notion of overall, or global, argument strength. Our claim, then, is that an argument is stronger insofar as its grounding relation is invulnerable rather than vulnerable, or merely vulnerable rather than hypervulnerable.

To illustrate these points, suppose that there are 100 ducks on some pond, and that each duck has been tagged with a different number ranging from 1 to 100. And suppose further that we're examining arguments in which each premise expresses the proposition that one particular duck – the duck whose number corresponds to the number of that premise – is, say, yellow. So premise 17, for example, expresses the proposition that duck 17 is yellow. Now, compare a 51-premise

reliable, convergent argument in support of the conclusion that all the ducks on the pond are yellow, with a 52-premise reliable, convergent argument in support of that same conclusion. (Assume, in each case, that the ducks have been selected randomly.) Each argument is invulnerable. However, the argument with the smaller premise set contains a grounding relation that is both vulnerable and hypervulnerable, since the elimination of any single premise from that argument would transform it into an unreliable argument. But the grounding relation within the other argument, containing the larger premise set, is invulnerable, since that argument would remain reliable even after the elimination of any single proposition from its premise set. The 52-premise argument is therefore more secure in the sense that it can better withstand challenges to its evidential base. (Imagine, for example, that we discovered that duck 17 was observed under problematic lighting conditions, thereby causing us to lose confidence in the truth of premise 17.) Therefore, other things being equal, the argument with the larger premise set is to be preferred, as the stronger argument, over the argument with the smaller premise set.

This recommendation, though reasonable, may also appear unremarkable in that, in the case of these two arguments, it accords with and therefore simply reinforces one of our earlier recommendations to the effect that arguments with stronger grounding relations are to be preferred to arguments with weaker grounding relations. The two recommendations are actually independent of one another, however, and in fact they frequently clash. Compare the 52-premise reliable argument described above, with a 100-premise valid, convergent argument in support of the same conclusion that all the ducks on the pond are yellow. (Once again, each argument is invulnerable.) The grounding relation within this valid argument is both vulnerable and hypervulnerable, since the elimination of any single premise from this argument would transform it into an invalid (though still reliable) argument. Therefore, were other things equal, it would be reasonable to prefer the 52-premise argument with an invulnerable grounding relation, over the 100-premise argument as being the stronger of the two arguments. Of course, other things are not close to being equal in this case. The two arguments in question contain different types of grounding relations, based on very different bodies of evidence. That the 100-premise argument is valid is certainly a reason to regard it as

the stronger argument. Nonetheless, the vulnerability of its grounding relation detracts from that argument's overall strength. And the fact that the 52-premise reliable argument has an invulnerable grounding relation is a point in its favor.

Sometimes, therefore, considerations pertaining to the vulnerability of grounding relations can provide you with a reason to prefer one reliable argument over another reliable argument, or to prefer a reliable argument over a valid argument. Only in special circumstances, however, can these considerations favor a valid argument over a reliable argument.

The three arguments about ducks, described above, are all compact. Since every compact, valid argument contains a grounding relation that is both vulnerable and hypervulnerable, considerations about the vulnerability of grounding relations can never give you a reason to prefer a compact, valid argument over a reliable argument. A valid argument can contain an invulnerable or merely vulnerable grounding relation only if it's non-compact, and therefore it's possible to prefer a valid argument over a reliable argument, on grounds of relational vulnerability, only if the valid argument is non-compact and the reliable argument contains a vulnerable grounding relation.

Since relational vulnerability detracts from an argument's overall strength, compact, valid arguments suffer from a kind of inherent weakness not present in many other arguments. This is interesting because validity and compactness represent important argumentative ideals that are captured within our cogency conditions. Relational vulnerability is thus a liability associated with aiming at cogent arguments containing the strongest possible type of grounding relation. Reliable arguments, by contrast, may contain either vulnerable or invulnerable grounding relations, regardless of whether they are compact or non-compact; although, of course, no non-compact, grounded argument – regardless of whether it's valid or reliable – can contain a hypervulnerable grounding relation.

The vulnerability of an argument's grounding relation can affect whether arguments closely related to that argument might be cogent for you. Suppose, once again, that it's not rational for you to believe some premise *P* of some argument *A* in support of conclusion *C* (but that you hold true, rational beliefs about *A*'s structural properties). It follows that *A* is not cogent for you. However, if *A* contains a

hypervulnerable grounding relation, and if A is reliable, then, since no zapped premise set of A reliably grounds C , an entire class of arguments closely related to A must also fail to be cogent for you. (If A is valid, then it's an open question whether any zapped premise set of A reliably grounds C .) But if A contains a grounding relation that is merely vulnerable, then there remains a possibility that A , without P , might still ground C in the same (valid or reliable) manner in which A itself grounds C , and therefore there remains some prospect that an argument closely related to A might be cogent for you. Finally, if A contains an invulnerable grounding relation, then it is certain that A , without P , still grounds C in the same (valid or reliable) manner in which A itself grounds C , and thus there remains a greater prospect that an argument closely related to A might be cogent for you.

Since argument diagrams are designed principally to display relevance relations, it's not possible to read off, from an accurate diagram of an argument A containing two or more premises, whether A contains a vulnerable or invulnerable grounding relation, without examining the propositional content of A 's premises and conclusion. (Obviously, any single-premise grounded argument will contain a hypervulnerable grounding relation.) Nor is it possible to articulate any very interesting universal claims about the status of the grounding relations within linked or convergent arguments, since both types of argument can exhibit a wide variety of types of valid or reliable support.

However, we can draw some important connections between the related notions of argument vulnerability, and the vulnerability of an argument's grounding relation. Specifically, if A is a hypervulnerable grounded argument, then A must contain a hypervulnerable grounding relation, since, if the elimination of any single premise P from A would destroy all relevant support for A 's conclusion, then that same act of elimination would transform A into an unreliable argument. However, it's *not* the case that every invulnerable grounded argument must contain an invulnerable grounding relation, because even if it's true that no zapped premise set of some argument A is irrelevant to A 's conclusion C , it's possible that one or more of those zapped premise sets may provide a weaker type of support for C than is provided by A itself. In fact, an invulnerable argument may contain either an invulnerable, hypervulnerable, or merely vulnerable grounding relation. So, while hypervulnerable arguments can exhibit only

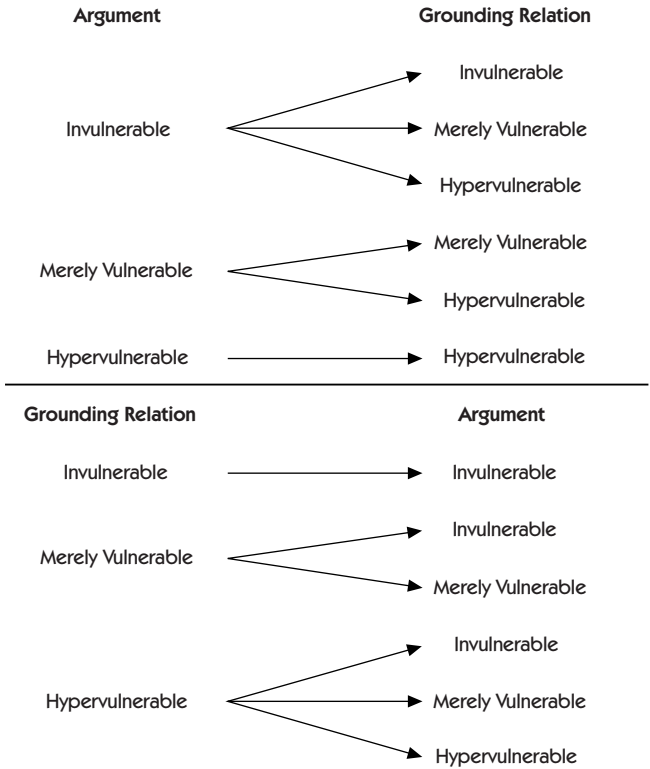


Figure 5. The Permutations of Vulnerability

one type of grounding relation, invulnerable arguments can exhibit all three types. And, as their name suggests, merely vulnerable arguments constitute an intermediate case. No merely vulnerable argument can contain an invulnerable grounding relation, but it may contain either a hypervulnerable or a merely vulnerable grounding relation.

Not surprisingly, an interesting asymmetry obtains between some of the claims made in the last paragraph, and their respective converse claims. For example, while a hypervulnerable argument may contain only one type of grounding relation – a hypervulnerable relation – an argument with a hypervulnerable grounding relation may be either invulnerable, hypervulnerable, or merely vulnerable. And while an invulnerable argument may contain any type of grounding relation, an argument with an invulnerable grounding relation must itself be

invulnerable. For suppose that A contains an invulnerable grounding relation. Then no zapped premise set of A provides A 's conclusion C with a weaker type of support than does A itself. Therefore, no zapped premise set of A is irrelevant to C . Therefore, A is an invulnerable argument.

And, as before, mere vulnerability constitutes an intermediate case. Just as merely vulnerable arguments may contain only two types of grounding relations, an argument with a merely vulnerable grounding relation may itself be either invulnerable or merely vulnerable. But no argument with a merely vulnerable grounding relation can itself be hypervulnerable. For suppose that A contains a merely vulnerable grounding relation. Then for some premise P of A , eliminating P would not destroy whatever grounding relation obtains within A . So at least one zapped premise set of A must be relevant to A 's conclusion. So A cannot be a hypervulnerable argument.

EXERCISES

- 5.59 Provide an equivalent definition of a hypervulnerable grounding relation, employing the notion of a zapped premise set.
- 5.60 Prove that every valid, compact argument contains a hypervulnerable grounding relation.
- 5.61 Prove that no non-compact, grounded argument contains a hypervulnerable grounding relation.
- 5.62 Construct a hypervulnerable argument without a hypervulnerable grounding relation.
- 5.63 Construct a merely vulnerable argument without either a merely vulnerable or a hypervulnerable grounding relation.
- 5.64 Construct an invulnerable, convergent argument about ducks with an invulnerable grounding relation.
- 5.65 Construct an invulnerable, convergent argument about ducks with a hypervulnerable grounding relation.
- 5.66 Construct an invulnerable, convergent argument about ducks with a merely vulnerable grounding relation.
- 5.67 Repeat exercises 5.64–5.66, constructing linked rather than convergent arguments.
- 5.68 Prove that no merely vulnerable argument contains an invulnerable grounding relation.

- 5.69 Construct a merely vulnerable, linked argument about ducks with a hypervulnerable grounding relation.
- 5.70 Construct a merely vulnerable, linked argument about ducks with a merely vulnerable grounding relation.
- 5.71 Construct a hypervulnerable, convergent argument about ducks with a hypervulnerable grounding relation.
- 5.72 Construct a hypervulnerable, linked argument about ducks with a hypervulnerable grounding relation.
- 5.73 For each of the following categories, if an argument of this type is possible, then construct both a linked and a convergent argument with those properties. If an argument of this type is not possible, explain why it's not possible. In each case where you are able to construct a pair of arguments, state whether your arguments are invulnerable, hypervulnerable, or merely vulnerable. (Hint: Exactly four cases are impossible.)
- (a) a compact, valid argument with an invulnerable grounding relation
 - (b) a non-compact, valid argument with an invulnerable grounding relation
 - (c) a compact, valid argument with a hypervulnerable grounding relation
 - (d) a non-compact, valid argument with a hypervulnerable grounding relation
 - (e) a compact, valid argument with a merely vulnerable grounding relation
 - (f) a non-compact, valid argument with a merely vulnerable grounding relation
 - (g) a compact, reliable argument with an invulnerable grounding relation
 - (h) a non-compact, reliable argument with an invulnerable grounding relation
 - (i) a compact, reliable argument with a hypervulnerable grounding relation
 - (j) a non-compact, reliable argument with a hypervulnerable grounding relation
 - (k) a compact, reliable argument with a merely vulnerable grounding relation
 - (l) a non-compact, reliable argument with a merely vulnerable grounding relation

- 5.74 Following the pattern established in exercise 5.57, define *second-order vulnerability*, *second-order invulnerability*, *second-order hyper-vulnerability*, and *second-order mere vulnerability*, as properties of grounding relations, and repeat exercise 5.73, constructing, where possible, linked and convergent arguments with the appropriate second-order properties.

5.5 Illustrations

Every argument appeals to a (more or less determinate) body of evidence. However, since the information contained within a body of evidence can very often be described or “packaged” in different ways, the structure of one and the same argument can vary depending upon how that argument’s evidential base is carved into discrete propositional components. We saw in Chapter 1, for example, that the macrostructure of a single argumentative passage can sometimes be accurately represented by more than one canonical form. By the same token, although no argument can be both linked and convergent, it’s possible that there can be a number of accurate microstructural representations of an author’s argument, some of which are linked and some of which are convergent. Though structurally incompatible, these various representations might all be accurate, in the sense that each could be hypothetically endorsed by the argument’s author as fair and accurate representations of her argumentative proposal, were she to read and understand them.

Consider, for example, the following argumentative passage from the book *Rationality*, written by Harold Brown.

- (J) (1) Even the most brilliant scientists are fallible. (2) Kepler thought he could prove that there must be exactly six planets; (3) Galileo denied that the sun and moon play any role in causing the tides . . . ; (4) Newton worked at least as hard at alchemy as at physics; (5) Einstein spent a large part of his life in an unsuccessful attempt to develop a unified field theory.

The argument expressed within (J) can plausibly be represented as a convergent argument, with four pooled premises, in support of the conclusion that (1) every brilliant scientist has been mistaken about at least one scientific matter within their field of expertise. On this interpretation, premise (2), for example, is understood to be

independently relevant to (1), on the presupposition that there are not exactly six planets in our solar system. By definition, a presupposition of an argument cannot be a premise in that same argument. So in claiming that the argument expressed within (J) presupposes that there are not exactly six planets, we are saying that, although Brown's relevance claim is dependent upon this proposition, he does not expect his audience to "employ" that proposition as a premise. On this interpretation, each of premises (3), (4), and (5) must, of course, respectively presuppose, in a similar fashion, yet a different proposition.

Suppose, however, that (J) expresses an embryonic argument. That is, suppose that, although Brown believes that he has established proposition (1) as an object of rational belief, he lacks a fully determinate conception of the macrostructure of his own argument. In particular, he lacks a clear conception of exactly how (1) follows from a determinate set of premises. So, while he might endorse a representation of (J) as a four-premise convergent argument, he might also endorse an interpretation according to which (J) expresses an eight-premise linked argument, where each of the argument's four linked sets contains a tacit as well as an explicitly asserted premise. On this interpretation, premise (2), for example, offers a single item of relevant information in support of the argument's conclusion only in conjunction with the implicit premise that there are not exactly six planets. This claim is incompatible with the claim that (2) converges on the argument's conclusion. So an author can not consistently simultaneously offer (J) as expressing both a linked and a convergent argument. But Brown might be satisfied with either interpretation as being a fair and accurate representation of the argument he vaguely had in mind.

A similar phenomenon can arise even when dealing with non-embryonic arguments. Suppose that Brown, being thoroughly familiar with the history of science, composed passage (J) with the clear intention of offering a convergent argument. Someone less scientifically literate, however, might have difficulty appreciating the independent relevance of each of the argument's premises to the argument's conclusion, without deliberately constructing linked sets containing additional premises. Brown might accept that this person's interpretation of his passage as expressing a linked argument does not significantly distort the substance of his argumentative proposal. This does not mean that the distinction between linked and convergent arguments

is unimportant in this case, since any serious discussion concerning the cogency of Brown's argument must of course focus on one particular interpretation of that argument (or at least one particular interpretation at a time). But Brown may believe that it is immaterial whether, for example, the claim that there are not exactly six planets is treated as a premise or a presupposition, since he may believe that his argument is cogent – likely his main concern – using either a linked or a convergent interpretation.

Here is a different example, where there may be equally acceptable choices, not between a linked as opposed to a convergent interpretation, but between two (or more) convergent arguments with significantly different properties. Suppose that there are 100 ducks on pond 100, and that 60 randomly chosen ducks have been observed to be yellow. Once again, this information can be packaged in different ways in support of the conclusion that all the ducks on pond 100 are yellow. Argument (K), we can imagine, contains 60 convergent premises, each asserting of one particular duck on pond 100 that she is yellow; whereas argument (L) is a convergent argument containing the single premise that 60 of the ducks on pond 100 are yellow. (K) are (L) are quite literally different arguments, as they contain different premises. But furthermore, (K) is an invulnerable argument with an invulnerable grounding relation; whereas (L) is a hypervulnerable argument with a hypervulnerable grounding relation. Although their respective premise sets convey exactly the same information, the two arguments bear strikingly different properties. But someone arguing, from this body of evidence, that all the ducks on pond 100 are yellow, may not care whether she presents (or is perceived as presenting) argument (K) or argument (L), provided she is confident that none of her 60 observations of yellow ducks is likely to be challenged.

A wide variety of factors influence how an author chooses to describe the information upon which her argument is based, and accordingly how she conceives of both the macro- and microstructure of any such argument. A great deal usually depends upon her epistemic relation to her audience – what challenges, if any, she anticipates from them, and the extent of any shared background beliefs upon which (she believes) she can rely. In fact, these epistemic matters are so important that, even in simple cases where an argument rests upon a fairly straightforward evidential base, and where there are few options as to how that evidence

can be packaged, it can still be remarkably difficult to know whether to describe an argument as, say, linked or convergent, without substantial access to an author's (or her audience's) epistemic state.

Suppose, for example, that a committee of ornithologists is attempting to compile a list of suitable avian candidates to be tested during an upcoming scientific experiment. One committee member argues as follows:

(M) (1) Max is female and (2) Max is also a duck. So (3) Max is not a suitable experimental subject.

Taken almost completely out of context, with next to no indication as to the identity of the argument's author or her intended audience, and with no background information as to the nature of the experiment or the pool of available candidates, the argument expressed within (M) might plausibly be assigned virtually *any* of the microstructural interpretations that we have explored up to this point in the text.

Suppose, for example, that the experiment in question requires female birds, and that it also requires ducks, but that there is no need for female ducks. Then (M) plausibly expresses a valid, linked argument, with propositions (1) and (2) forming a linked set. The mere fact that Max is a duck, for example, does not count in favor of the proposition that she is not a suitable candidate, since proposition (2) says nothing about Max's sex, and experimental ducks are required. (Suppose that there are exactly as many male as female ducks available; so the fact that Max is a duck is no reason to believe that Max is female and therefore not a suitable subject.) Nor is (1) independently relevant to (3), since (1) says nothing about Max's species, and experimental females are required. (Suppose that there are exactly as many non-ducks as there are ducks available; so the fact that Max is a female is no reason to believe that she is a duck and therefore not a suitable candidate.) But (1) and (2) taken together, in this context, guarantee that Max is not a suitable candidate.

(M) might plausibly express a reliable, linked argument, however, if we change one of our background assumptions and posit that, while there is a need for female ducks after all, the only female ducks required are those with a rare Rh-negative blood type. (Note that this assumption does not alter the fact that neither (1) nor (2) is independently relevant to (3).)

If, however, there is no need for either female birds or ducks, then (M) might plausibly express two valid, single-premise convergent arguments; or two reliable, single-premise convergent arguments, if we suppose that the only female birds required are extremely rare, and that the only ducks required are extremely rare. (The odds, in the case of either premise, are that Max, or indeed any randomly chosen female bird or any randomly chosen duck, does not belong to the required rare category.)

Still other possibilities exist. (M) might plausibly express a valid, convergent argument, with two pooled premises, if we suppose that there is no need for female ducks, that the only female birds required are extremely rare, and that the only ducks required are extremely rare. Or one of propositions (1) and (2) might be noise. Or the author of (M) might believe that, while proposition (2), say, converges on (3), proposition (1) contributes to the production of evidence in support of (3) in some as yet unspecified manner, i.e., without either converging on (3) or being a member of some linked set. Or (M) might express an abnormal argument, as in the situation in which the author of (M) believes that neither (1) nor (2) is in fact relevant, in any way, to (3).

We shouldn't be troubled by the fact that even such a relatively simple argumentative proposal, and such a clearly written text, can in principle support so many conflicting interpretations. Recall that we are reading (M) almost entirely out of context. Knowing something about the identity of an argument's author usually narrows down our options considerably. What matters most when dealing with normal arguments is that we pay close attention to the available linguistic and contextual evidence, that we be clear in our own minds as to precisely what view we are attributing to some author, and, if possible, that we attribute to her an argument that is cogent both for herself and for her social audience. Of course, not every argument is cogent. But every normal author believes her argument to be cogent for some specific audience. So, at the very least, we should always aim to arrive at a (plausible) conception of a normal author's argument that clearly articulates (some conception of) the content of that belief. And this necessarily involves offering some proposal as to how that author's premise set is relevant to her conclusion. The more we understand about the various ways in which premise sets can provide relevant support for conclusions, the better listeners we shall become. As our

appreciation of what an author *might* be saying increases, the more likely we are to arrive at an interpretation of her words that captures what she takes herself to be doing, and that honors the conception she has of herself as someone sincerely engaged in an exercise of rational persuasion.

EXERCISES

- 5.75 Construct and diagram an interpretation of passage (J) as a linked argument.
- 5.76 Suppose you've observed that 60 ducks on pond 100 are yellow. Construct (a) a compact 61-premise, merely vulnerable, linked argument *A*, with a merely vulnerable grounding relation, which makes use of that (and perhaps additional) information. Now construct (b) a compact two-premise, hypervulnerable, linked argument, with a hypervulnerable grounding relation, (c) a compact 62-premise, invulnerable, linked argument *A*, with a merely vulnerable grounding relation, and (d) a compact 62-premise, invulnerable, linked argument, with an invulnerable grounding relation, where, in each case, the premise set of the argument in question conveys exactly the same information as is conveyed by the entire premise set of *A*. Prove that each of your arguments possesses the various requisite properties.
- 5.77 Describe a set of conditions under which passage (M) might plausibly express a single reliable, convergent argument with two pooled premises.
- 5.78 Roll a fair die to obtain a number *n*. Compose an *n*-premise argumentative passage about either the suitability or the unsuitability of some particular job applicant. Provide three separate microstructural interpretations of the argument expressed within that passage, invoking background information as you see fit.
- 5.79 On the assumption that each of the following passages expresses at least one normal (linked or convergent) argument, directed to you as a member of the author's intentional audience, identify the macrostructure and construct a diagram of that argument. Employ modalities and squiggly symbols to the extent that you feel confident in doing so. Identify any noteworthy

presuppositions of the arguments in question and justify your diagrams as you see fit.

- (a) “Almost every species thrives on raw food. Only humans cook their food and die at epidemic rates of cancer, heart disease, stroke and diabetes.” – *Alive* magazine, April 2002
- (b) “Remember that regardless of what you inherit from your parents or the state of your immune system, you want to reduce the amount of allergens you are exposed to. If you are spending time outdoors, shower and change your clothes when you come in.” – *Flare* magazine, September 2002
- (c) “Yet females are larger than males in a majority of animal species – and probably a large majority at that. For starters, most animal species are insects and female insects usually exceed their males in size.” – Stephen Jay Gould, *Hen’s Teeth and Horse’s Toes*
- (d) “. . . since blue whales are the largest animals that have ever lived, and since females surpass males in baleen whales, the largest individual animal of all time is undoubtedly a female.” – Stephen Jay Gould, *Hen’s Teeth and Horse’s Toes*
- (e) “Certainly I had no illusions that my death, if it came, would be a sacrifice. It would merely be a death, and not a good one either. A good death involved a certain amount of choice, ritual and style. There were no good deaths in the war.” – Philip Caputo, *A Rumor of War*
- (f) “‘Killing a cow is like killing a person,’ said one man, a tree-cutter. ‘If you do it, you deserve to die.’” – cited in *The Hamilton Spectator*, October 18, 2002, reporting on an incident near Delhi in which five Hindu men who allegedly killed a cow were clubbed and stoned to death.
- (g) “Lying and secrecy differ, however, in one important respect. Whereas I take lying to be prima facie wrong, with a negative presumption against it from the outset, secrecy need not be. Whereas every lie stands in need of justification, all secrets do not.” – Sissela Bok, *Secrets*
- (h) “Although Canadians like to think they’re kinder, more tolerant and more generous than residents of the United States, it’s not so . . . the average Canadian who makes a

tax-deductible donation gives 0.64 per cent of his or her income, while the average American hands over 1.58 per cent.” – *The Hamilton Spectator*, November 9, 2002

- (i) “Serious women have a difficult time with clothes, not necessarily because they lack a developed sense of style, but because feminine clothes are not designed to project a serious demeanor.” – Susan Brownmiller, *Femininity*
- (j) “A 1-in-100 risk of dying [for an adult liver donor] may not seem like bad odds, but there’s more to this ethical dilemma than a simple ratio. The first and most sacred rule of medicine is to do no harm. ‘For a normal healthy person, a mortality rate of 1% is hard to justify,’ says Dr. John Fung, chief of transplantation at the University of Pittsburgh Medical Centre. ‘If the rate stays at 1%, it’s just not going to be accepted.’” – *Time* magazine, January 28, 2002
- (k) “The fact that something may be instinctive or natural doesn’t mean that it’s good for us. The brain circuitry of a moth gives it an instinctive attraction toward bright lights, and this allows the moth to navigate at night using the stars and the moon. Unfortunately, the modern moth is also living in a world that is dramatically different from the one in which it evolved. We now have moth and mosquito zappers. By doing what is natural and instinctive, the modern moth flies into the zapper and is incinerated instantly.” – Barbara and Allan Pease, *Why Men Don’t Listen and Women Can’t Read Maps*
- (l) “Ideally, every meal should contain foods that are alive with energy—fresh grains and vegetables. For this reason, organically grown food is best, for it has had little processing and is ostensibly chemical-free.” – Robin and Jon Robertson, *The Sacred Kitchen*
- (m) “The most favorable stove site is one in which the cook can see all who enter the kitchen, thus allowing for smooth interaction. The theory is that if a cook faces away from the doorway, then health, wealth and domestic harmony can be adversely affected. The cook’s *chi* will be dispersed due to being startled by those entering the kitchen.” – Robin and Jon Robertson, *The Sacred Kitchen*

- (n) "Europeans and Americans live quite different sorts of lives. More than one in five Americans are poor, whereas the figures for continental Western Europe hover around 8 percent. Sixty percent more babies die in their first year of life in the US than in France or Germany. The disparity between rich and poor is vastly greater in the US than anywhere in continental Europe . . . but whereas fewer than one American in three supports significant redistribution of wealth, 63 percent of Britons favor it and the figures are higher still on the European continent." – *The New York Review of Books*, August 15, 2002
- (o) "To visit a modern CAFO (Confined Animal Feeding Operation) is to enter a world that, for all its technological sophistication, is still designed according to Cartesian principles: animals are machines incapable of feeling pain. Since no thinking person can possibly believe this any more, industrial animal agriculture depends on a suspension of disbelief on the part of the people who operate it and a willingness to avert your eyes on the part of everyone else." – Michael Pollan, *The New York Times Magazine*, November 10, 2002
- (p) "Defence lawyer Simon Renouf argued yesterday that charges against three members of the Edible Ballot Society should be quashed. He said the section of the Canada Elections Act they are charged under does not apply to their situation. . . . [The three individuals] were charged after they ate their ballot papers during the last federal election. They were protesting what they said was a lack of choice in the list of candidates. Renouf said the section they are charged under deals with unlawfully destroying ballots with the intention of influencing the vote. But in this case the three ate only their own ballots and were not trying to influence the choice of other voters, he said." – *The Hamilton Spectator*, January 12, 2002
- (q) "We can safely predicate 'he' of the [anonymous] author of *The Cloud*, not merely because of the sense of masculinity that pervades the whole, nor because of the knowledge of theology that is revealed, nor even because of the authority

with which the young disciple for whom the book was written is being directed – all these are cumulative, but not conclusive – but because the book's final paragraph reveals him as a priest, dispensing 'God's blessing and mine.' – from Clifton Wolters's introduction to *The Cloud of Unknowing*

- (r) "‘The nation’ is one of the most mysterious categories of modern thought. It is, most citizens of nations would agree, something that people are willing to die for. But anyone seeking a more precise and scientific definition will be plunged into a swamp of turgid scholarship. . . . There are not many things people are willing to die for that they cannot point to or touch or even adequately put into words." – Barbara Ehrenreich, *Blood Rites*
- (s) "Works of art often bring out hitherto unnoticed or poorly differentiated features. We might think, for example, that there is no difference . . . between sorrow and grief. We need only compare Michelangelo's *Pietà* with the figure at the left in Picasso's *Guernica* to learn otherwise. Each portrays a woman holding her dead child. The Michelangelo expresses incalculable sorrow, the Picasso unmitigated grief. Sorrow evidently can be as profound as grief. . . . But grief, we discover, is grittier; it is tinged with anger. Sorrow is smooth. The comparison effects a refinement of the sensibilities, leaving us unlikely again to conflate or confuse the two emotions." – Catherine Elgin, *Considered Judgment*
- (t) "They found another [poll] where a sample of young women were asked to make a hypothetical choice between 'a husband who could make a good living' and one prepared to 'communicate about his deepest feelings.' They report, with undisguised approval, that 80 percent would prefer the second kind of man. . . . What we are hearing young women say is that they want a type of man who is in fact quite rare. The point is not that most men are laconic. On the contrary, many hold forth about a variety of subjects with little encouragement, but not about what women regard as 'deepest feelings.' Most men are reluctant to reveal what they fear are their weaknesses; nor do they care to dwell on their defeats. It's almost as if admitting them will make them even more

vulnerable.” – Andrew Hacker, *The New York Review of Books*, December 5, 2002

- (u) “Fairy tales often engage with issues of light and darkness – the plots represent struggles to distinguish enemies from friends, the normal from the monstrous, and the slant they take is by no means always enlightened. The tales often demonize others in order to proclaim the side of the teller good, right, powerful – and beautiful.” – Marina Warner, *From the Beast to the Blond*
- (v) “In some basic sense, the emotional terrain of the slasher film is pretechnological. The preferred weapons of the killer are knives, hammers, axes, ice picks, hypodermic needles, red hot poker, pitchforks, and the like. Such implements serve well a plot predicated on stealth and the unawareness of later victims that the bodies of their friends are accumulating just yards away. But the use of noisy chain saws and power drills and the nonuse of such relatively silent means as bow and arrow, spear, catapult and sword would seem to suggest that closeness and tactility are also at issue. . . . Knives and needles, like teeth, beaks, fangs and claws, are personal extensions of the body that bring attacker and attacked into primitive, animalistic embrace.” – Carol Clover, *Men, Women and Chain Saws*
- (w) “Afterward, when, frankly speaking, it was already too late, various agencies filed reports describing this man. If one compares them, one cannot help but be astonished. For example, one says that he was short, had gold teeth, and was lame in his right foot. Another says that he was hugely tall, had platinum crowns, and was lame in his left foot. Yet a third notes laconically that he had no defining characteristics whatsoever.

We should add that all of the reports were worthless. To begin with, the subject was lame in neither foot, and he was neither short, nor hugely tall, but simply tall. As for his teeth, the left ones had platinum crowns, the right – gold. He was dressed in an expensive gray suit and wore foreign-made shoes of the same color. A gray beret was cocked rakishly over his ear, and under his arm he carried a walking stick

with a black knob shaped like a poodle's head. . . . In a word – a foreigner.” – Mikhail Bulgakov, *The Master and Margarita*

- (x) “The mass of men lead lives of quiet desperation. . . . But it is a characteristic of wisdom not to do desperate things.” – Henry David Thoreau, *Walden*

5.80 Locate an interesting, recently published argumentative text and repeat exercise 5.79, employing that passage. Be sure to identify the source of your text.

Supplementation

6.1 Hybrid Arguments

A compact argument may contain a premise set that is relevant to its conclusion, while also containing one or more premises that neither converge on that conclusion nor are members of any linked set. In one important class of cases, premises that are irrelevant, on their own, to an argument's conclusion nonetheless contribute to the production of evidence in support of that conclusion, by providing information that strengthens the support independently provided, by the remaining premises, to the argument's conclusion. Consider, for example, the following argument.

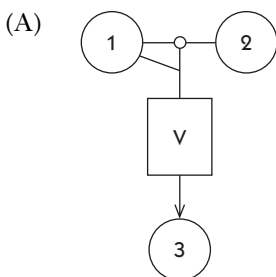
- (A) 1. Daphne has seen 100 yellow ducks on the pond.
 2. There are exactly 100 ducks on the pond.
-
3. All the ducks on the pond are yellow.

In (A), (2) is independently irrelevant to (3). That there are a certain number of ducks on the pond tells us nothing about the color of those ducks. So (A) is not a convergent argument. Premise (1), however, does converge on (3). So (1) is not a member of any linked set. And so (A) is neither a linked nor a convergent argument.

Although we have previously encountered compact arguments that are neither linked nor convergent, (A) represents a novel situation in that (2) neither converges on (3) nor is it a member of any linked set. Yet (2) plays a crucial role within this valid argument. Without (2), and without any corresponding background knowledge about the number of ducks on the pond, (A) would no longer be valid. So (2) strengthens the relevant support provided for (3) by (1).

In order to describe the unique pattern of support present within (A), we need to introduce a supplementation relation, which, for pedagogical reasons, we'll define initially as a binary relation obtaining between individual premises. We'll say that a premise *P* *supplements* a premise *Q*, with respect to a conclusion *C*, just in case (i) *P* is independently irrelevant to *C*, (ii) *Q* is independently relevant to *C*, and (iii) *P* and *Q* together provide a stronger reason *R* in support of *C*, which *Q* alone does not provide. We'll refer to any such reason *R*, which is generated by a supplementation relation, as a *supplementary* reason. And we'll also say that an argument *A* is a *hybrid* argument just in case (i) the premise set *S* of *A* is relevant to *A*'s conclusion, and (ii) there exists at least one supplementation relation within *S*. (A), therefore, is a hybrid argument, since (2) is independently irrelevant to (3), but (1) is independently relevant to (3) and, furthermore, (1) and (2) together – but not (1) alone – ground a valid inference in support of (3).

Every hybrid argument, by definition, provides at least two reasons in support of its conclusion. In (A), we have one reason arising just from the argument's convergent premise, plus the stronger, supplementary reason. Although there may be some temptation simply to ignore the argument's weaker reason as having been displaced by the supplementary reason, we'll insist, with one set of exceptions to be noted later, that all the available reasons within a hybrid argument must be understood as being pooled. Every supplementary reason is dependent and builds upon some other reason (or reasons). Therefore, we want to ensure that it will be transparent, from the diagram of any hybrid argument, which particular type of evidential support is provided, to the argument's conclusion, by the premise (or premises) upon which the supplementary reason depends. Accordingly, we'll diagram the hybrid (A) as follows



where it's understood that this diagram contains exactly two relevance arrows: one emanating directly from premise (1), and the other consisting of a discrete supplementation symbol, resembling the “T” symbol, but containing a small unnumbered node at the intersection of its vertical and horizontal lines. That the vertical line within the supplementation symbol emanates from this unnumbered node is meant to suggest that the supplementary reason *R* is provided by the supplementation of (1) by (2), and is not generated by any single (numbered) premise on its own. By convention, the irrelevant, or *supplementing* premise always appears to the right of the supplementation symbol, and the relevant, or *supplemented* premise always appears to the left. It's clear, from diagram (A), that argument (A) provides two distinct reasons (or bits of evidence) in support of, and one reason to believe, its conclusion (3). It's clear, in particular, that one of the argument's reasons in support of (3) would remain intact even if premise (2) should be challenged. This important fact could not be read off the diagram of (A) were we to ignore the convergent reason arising from (1) alone. By diagramming hybrids as containing pooled premises, there is also less danger of confusing them with linked arguments. (Recall that diagram (NOT5) of Chapter 5 is incoherent.)

While (A) is valid, it's possible, of course, for a hybrid argument to be reliable. (Assume, in the following arguments, that the ducks in question have been selected randomly.)

- (B)
1. Daphne has seen 100 yellow ducks on the pond.
 2. Daphne has seen all but one of the ducks on the pond.

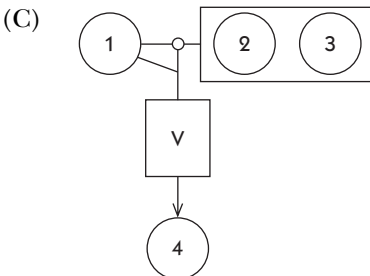
3. All the ducks on the pond are yellow.

On the assumption, once again, that we have no background knowledge about the number of ducks on the pond, (1) is relevant to but fails to reliably ground (3). Unless we know that there are (far?) fewer than 200 ducks on the pond, we can't say that (3) is more likely to be true than false, given that (1) is true. But since (B) is a reliable argument, and since (2) is independently irrelevant to (3), (B) is a reliable hybrid. (1) and (2) together provide a stronger reason in support of (3) than does (1) alone.

We need to generalize our definition of supplementation, however, since it's possible, for example, for a *set* of irrelevant premises to supplement an independently relevant premise. In (C), for example,

- (C) 1. Daphne has seen 100 yellow ducks on Portia's pond.
 2. Portia's pond is in Panama.
 3. Every pond in Panama has a population of exactly 100 ducks.
-
4. All the ducks on Portia's pond are yellow.

(1) is independently relevant to (4), but neither (2) nor (3) is independently relevant to (4), nor do (2) and (3) form a linked set. Furthermore, neither (2) nor (3), on its own, supplements (1). The irrelevant set $\{(2), (3)\}$, however, does supplement (1) since the set $\{(1), (2), (3)\}$ provides a stronger reason in support of (4) than does (1) alone. We can diagram this type of support as follows



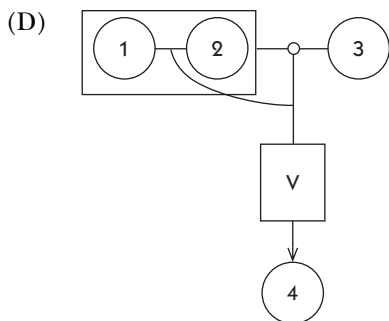
where each of the supplementing premises appears, again by convention, on the right side of the diagram, enclosed this time within a single rectangle to represent the fact that (1) is supplemented by the entire set composed of premises (2) and (3), but not by either

of those propositions in isolation. The supplementing premises are not connected in any way to each other, but float freely within the rectangle, since they contribute to the production of a relevance relation only when considered together as a set, and that fact is already captured diagrammatically by placing these premises together within a rectangle.

It's also possible for a single independently irrelevant premise to supplement a *set* of premises, as in

- (D)
1. Daphne's duck is yellow.
 2. As a general rule, yellow ducks are migratory.
 3. Daphne's duck is no exception to any rule.
-
4. Daphne's duck is migratory.

where (1) and (2) form a linked set, and where the independently irrelevant premise (3) supplements the set $\{(1), (2)\}$ – without supplementing either (1) or (2) on their own – since the three premises together provide a stronger reason in support of (4) than does the linked set alone.



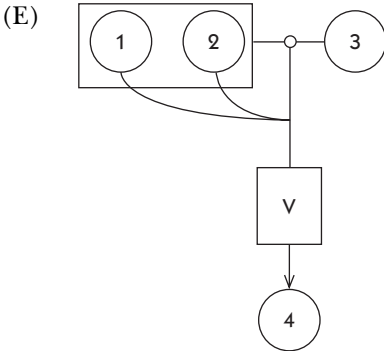
Diagrammatically we enclose a rectangle around the linked set of premises $\{(1), (2)\}$ to illustrate that (3) supplements that entire set.

In the hybrid (D), the particular type of relevant support provided to the argument's conclusion by the supplemented set on its own amounts to linked support. In other cases, a set of convergent premises can be supplemented by one or more independently

irrelevant premises. In (E), for example,

- (E) 1. Daphne's pet quacks.
 2. Daphne's pet has webbed feet.
 3. All those creatures who both quack and have webbed feet are ducks.
-
4. Daphne's pet is a duck.

premise (3) supplements the set $\{(1), (2)\}$ – without supplementing either (1) or (2) on its own – while (1) and (2) each converges on (4). (In this latter claim, we're presupposing common knowledge about the biological traits of ducks.) The three premises together provide a stronger reason in support of (4) than is provided either by (1) on its own, or by (2) on its own, or by pooling (1) and (2) together. (E) is a valid argument, but no proper subset of (E)'s premise set grounds a valid inference in support of (4). Diagrammatically, once again,



the rectangle around the set $\{(1), (2)\}$ illustrates that (3) supplements that entire set, while the individual relevance arrows emanating from (1) and (2) show that each of these premises converges on (4). (E) is our first example of a hybrid argument that provides more than two (pooled) reasons in support of its conclusion.

The following more general definition of the supplementation relation captures each of these more complex examples, covers our earlier definition as a special case, and in fact allows for any number of independently irrelevant premises to supplement any number of (linked or convergent) premises. We'll say that a set of premises S *supplements* a set of premises S' , with respect to a conclusion C , just in case (i) S

is irrelevant to C ; (ii) S' is relevant to C ; (iii) S and S' together provide a stronger reason R in support of C , which S' alone does not provide; and (iv) S and S' are the smallest sets yielding R that satisfy clauses (i), (ii), and (iii). There's no need to alter our definition of a hybrid argument as an argument containing at least one supplementation relation within its relevant premise set, and it's a simple matter to prove that each of (C), (D), and (E) are hybrid arguments.

The need for clause (iv), in our definition of the supplementation relation, is illustrated by hybrid arguments of the following sort.

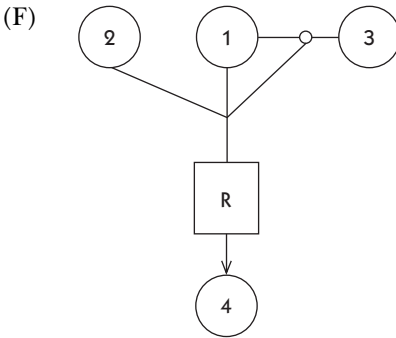
- (F)
1. Daphne has seen 90 yellow ducks on the pond.
 2. Dolores has seen 10 yellow ducks on the pond.
 3. Daphne has seen 90% of the ducks on the pond.
-
4. All the ducks on the pond are yellow.

In (F), the (unit) set $\{(3)\}$ supplements (the unit set composed of) premise (1), and together (1) and (3) ground a reliable inference in support of (4). This is all well and good. But without clause (iv), the set $\{(3)\}$ would also supplement the set $\{(1), (2)\}$. Intuitively, this seems incorrect because, although one of the reasons that $\{(1), (2), (3)\}$ – the argument's entire premise set – provides in support of (4) is indeed stronger than any reason provided by $\{(1), (2)\}$, premise (2) plays no role in generating this stronger reason. The independently irrelevant premise (3) supplements (1), and together they ground a reliable inference, because (3) tells us that the 90 yellow ducks that Daphne has seen constitute (much) more than half of the pond's duck population. That Dolores has seen 10 yellow ducks contributes nothing specifically to the claim that Daphne has observed that more than half of the duck population is yellow. It's possible that Dolores has observed some ducks that Daphne has not seen, but it's just as likely that each of the ducks that Dolores has observed has also been seen by Daphne. So clause (iv) rightly excludes premise (2) from participating in the supplementation of (1) by (3).

Clause (iv) in effect prevents the supplementation relation from possessing anything resembling the property of monotonicity. Without clause (iv), if a set S were to supplement a set S' , then S would continue to supplement S' no matter which or how many propositions were

added to either set – provided merely that the first (possibly enlarged) set remains irrelevant to the argument’s conclusion *C*, that the second (possibly enlarged) set remains relevant to *C*, and that the two sets together continue to provide a stronger reason in support of *C* than that provided by the second set alone.

Although premise (2) is not supplemented by premise (3) within (F), (2) is of course still independently relevant to (4); and (1) is independently relevant to (4) as well. So, although not every premise is involved in the argument’s supplementation relation, (F) still generates three separate reasons in support of (4) that, once pooled, yield a reliable hybrid argument containing two convergent premises.



That there is no rectangle within diagram (F) indicates clearly that the argument’s supplementation relation obtains only between single propositions.

While it’s important to restrict the range of the supplementation relation in the manner suggested above, it’s still possible for single arguments (usually arguments containing convergent premises) to contain multiple supplementation relations. In argument (G), for example,

- (G)
1. Daphne’s yellow Mallard duck is swimming on the pond.
 2. Dolores’s yellow non-Mallard duck is swimming on the pond.
 3. There are exactly two ducks swimming on the pond.

4. All the ducks swimming on the pond are yellow.

(1) and (2) each converges on (4), and (3) is independently irrelevant to (4). Premise (3) supplements (1), since the set $\{(1), (3)\}$ provides a stronger reason in support of (4) than does (1) alone, and no smaller set yields precisely that reason. By parity of reasoning, (3) also supplements (2). And finally, (3) also supplements the set $\{(1), (2)\}$, since the set $\{(1), (2), (3)\}$ provides a stronger reason in support of (4) than does $\{(1), (2)\}$ alone. And since (G) is a valid argument, and since no proper subset of (G)'s premise set grounds a valid inference in support of (4), no sets smaller than $\{(3)\}$ and $\{(1), (2)\}$ yield precisely the reason generated by the set $\{(1), (2), (3)\}$.

It would be possible but cumbersome to diagram (G) by drawing each of this argument's three supplementation relations. However, subject to one qualification to be introduced later, we'll adopt the convention, when diagraming an argument with more than one supplementation relation, of visually displaying only (one of) that argument's *principal* supplementation relation(s), i.e., (one of) the relation(s) that, of all the supplementation relations obtaining within the argument, generates (one of) the strongest supplementary reason(s) in support of the argument's conclusion. Every argument with a single supplementation relation trivially contains a single principal supplementation relation. And the only hybrid arguments containing two or more supplementation relations, that do not contain a single principal supplementation relation, are those arguments which fail to contain a single, strongest supplementary reason. (In the case of such ties, we'll allow artists to draw any *one* of the argument's principal supplementation relations of their choosing.) In (G), the principal supplementation relation obtains between (3) and the set $\{(1), (2)\}$, since this relation alone generates a valid argument. Therefore, we can diagram (G) in exactly the same way we diagramed argument (E).

Concerning our diagrammatic convention to focus on an argument's principal supplementation relation, two cautionary comments are in order. First, since our aim in diagraming an argument is to represent the microstructure of that argument as it is conceived by its author, we should follow this convention only when it does not interfere with our primary descriptive goal. If we have reason to believe that

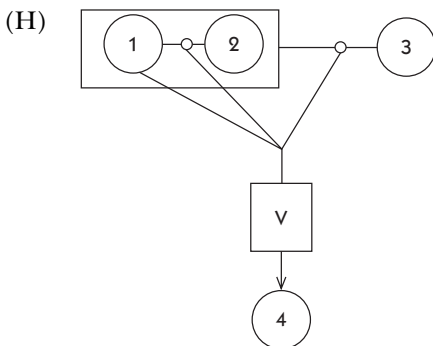
a normal author is unaware of, or disagrees with, a supplementation relation – principal or otherwise – obtaining among an argument's propositional components, then we should not incorporate that relation into our diagram of her argument. However, in the majority of cases, this convention merely articulates one particular application of the principle of charity. Diagraming an argument's principal supplementation relation typically allows us to attribute to an author the strongest argument possible that is compatible with the evidence at our disposal. And choosing not to display any of an argument's non-principal supplementation relations typically will not distort an author's intentions. Our diagram of argument (G), without representing every possible relevance relation obtaining among its constituent parts, captures the most salient fact that its author is most likely aiming at a valid argument.

Second, since arguments may contain multiple supplementation relations, it should come as no surprise that an irrelevant set of premises may supplement a set of premises that itself already contains a supplementation relation. In argument (H), for example, where it's understood that pond 100 has 100 ducks on it,

- (H) 1. Daphne has tagged 80 yellow ducks on pond 100.
 2. As a general rule, if Daphne has tagged 80 percent of the
 ducks on a pond, then all the ducks on that pond are yellow.
 3. The ducks on pond 100 are no exception to any rule.
-
4. All the ducks on pond 100 are yellow.

(1) is the only premise that converges on (4). Neither (2) nor (3) is independently relevant to (4). Nor do (2) and (3) together form a linked set in support of (4). Premise (2), however, obviously supplements premise (1).

Premise (3), on the other hand, fails to supplement either (1) or (2) on its own. However, (3) does supplement the set $\{(1), (2)\}$, since that set is relevant to (4), and since the set $\{(1), (2), (3)\}$ – but no proper subset of that set – grounds a valid inference in support of (4). Our diagram of this argument



indicates clearly that premise (3) supplements a pair of propositions that themselves are already related by way of supplementation. The argument's principal supplementation relation, of course, is the relation involving premise (3), since this is the relation that supports the argument's valid grounding claim. Therefore, provided there is no evidence to suggest otherwise, an accurate diagram of argument (H) ought to display that relation.

However, as mentioned earlier, we also want our diagrams to record the particular manner in which supplemented information provides relevant support for an argument's conclusion, since this support would survive any challenge to the information contained within the argument's supplementing set. Any diagram that failed to record the fact that (2) supplements (1) within (H), for example, would also fail to exhibit perspicuously that, should (3) be challenged as a claim it is not rational to believe, argument (H) would continue to provide two reasons in support of its conclusion. For this reason, it is important that diagram (H) display the non-principal supplementation relation obtaining between (1) and (2).

By way of contrast, there is no reason to record diagrammatically the non-principal supplementation relations obtaining within argument (G), since those relations would be undermined should proposition (3) be challenged. And it's clear from diagram (E) of argument (G) that, should (3) be challenged, the two reasons provided by the argument's two convergent premises would remain intact.

Therefore, our diagrammatic convention about displaying only the principal supplementation relation within a hybrid argument needs to be qualified in light of arguments such as (H). More precisely, then,

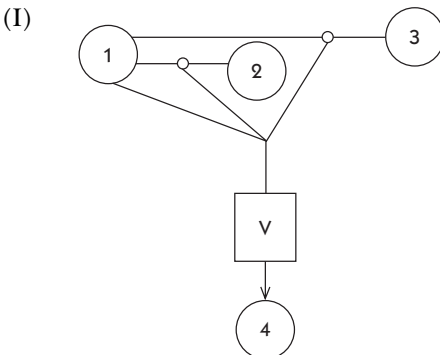
in diagramming a hybrid argument, we ought to display (one of) that argument's principal supplementation relation(s), as well as any supplementation relations that would survive a challenge to some member(s) of the supplementing set participating in the argument's (chosen) principal supplementation relation.

Argument (I) provides a useful illustration of the application of this convention.

- (I)
1. Daphne has tagged either five or six yellow ducks on pond 100.
 2. Daphne has not tagged an odd number of yellow ducks on pond 100.
 3. Daphne tags an even number of yellow ducks on a pond only if all the ducks on that pond are yellow.
-
4. All the ducks on pond 100 are yellow.

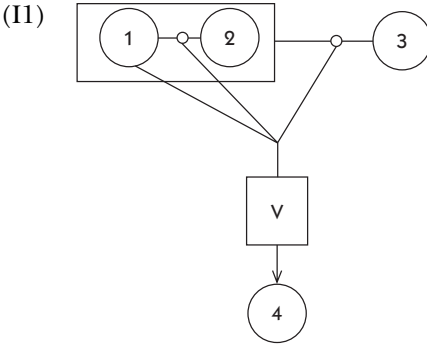
(1) is the only premise within (I) that converges on (4). Neither (2) nor (3) is independently relevant to (4), nor do they together form a linked set in support of (4). Each premise, however, supplements (1). Since together (1) and (2) guarantee that there are at least six yellow ducks on the pond, (1) and (2) together provide a stronger reason in support of (4) than does (1) alone. So (2) supplements (1). And since together (1) and (3) increase the probability that (4) is true, beyond what (1) alone would suggest, (3) also supplements (1).

Neither of these supplementation relations, however, is the argument's principal supplementation relation. So it would be a mistake to diagram (I) as follows.

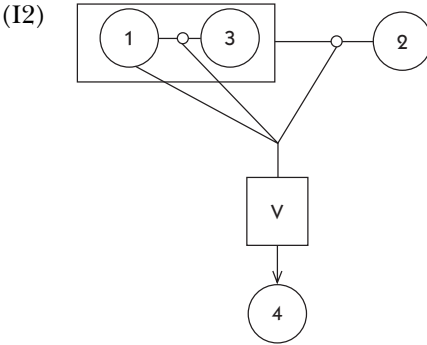


While diagram (I) correctly conveys the fact that (I) is a valid argument, that diagram does not exhibit how the argument's validity emerges from a single supplementation relation. So (I) is inadequate as a diagram of this hybrid argument, insofar as it fails to display the argument's principal supplementation relation. (Structurally, however, there is nothing problematic about diagram (I), as there's no limit on the number of relevance arrows that may emerge from a single node.)

In fact, interestingly, argument (I) has two principal supplementation relations, and can be diagramed adequately as either



or



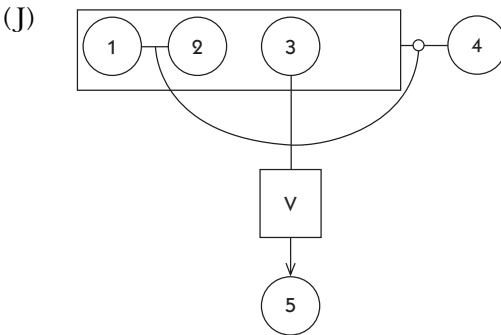
Since the principal supplementation relations depicted within (I1) and (I2) are tied in strength, artists are free to opt for either representation. And notice that each of these diagrams appropriately displays a non-principal supplementation relation as well as a principal supplementation relation. In the case of (I1), for example, the supplementation relation obtaining between (1) and (2) ought to be displayed because that relation would survive a challenge to the supplementing

premise (3). Analogously, the argument depicted within (I2) would continue to provide two reasons in support of (4), were (2) to be challenged. (Unfortunately, these diagrams still have limitations. (I1), for example, disguises the fact that, were (2) to be challenged, (3) would still be available to supplement (1) on its own.)

Since a set of premises can supplement a set of premises that are already related by supplementation, it should also come as no surprise that a set of premises can supplement a set containing both linked and convergent premises. In the following argument

- (J)
1. 90 ducks on the pond are Mallards.
 2. All Mallard ducks are yellow.
 3. There are 10 yellow non-Mallard ducks on the pond.
 4. There are exactly 100 ducks on the pond.
-
5. All the ducks on the pond are yellow.

(1) and (2) form a linked set, (3) converges on (5), and (4) supplements the set $\{(1), (2), (3)\}$. While (4) supplements a smaller set as well, (J) ought to be diagrammed as follows



so that only its (single) principal supplementation relation is displayed. (No non-principal supplementation relation within (J) would survive a challenge to (4).) (J), therefore, is a compact, hybrid argument in which three reasons – one convergent, one linked, and one supplementary reason – are pooled to ground a valid inference in support of the argument’s conclusion.

The supplementing premises within a hybrid argument allow us to reassess or reinterpret the evidence provided by (some of) the argument’s other premises in such a way that the probative force of that evidence increases as a result of that more informed reinterpretation.

Within each of the hybrids considered thus far, for example, the supplementing premises provide information that allows us to quantify precisely the amount of support provided to the argument's conclusion by its supplemented premises. In arguments (A) through (J), this is accomplished by the fact that we know, from the argument's entire premise set, exactly how many individuals are referred to in the conclusion of each of those arguments.

Of course, none of these features are essential characteristics of hybrid arguments. The following argument

- (K) 1. Kendra has seen nothing but yellow ducks on the pond.
 2. The sample comprised of those ducks on the pond which
 Kendra has observed is perfectly representative of the pond's
 entire duck population, with respect to the property of being
 yellow.
-
3. All the ducks on the pond are yellow.

is a valid hybrid, wherein (2) supplements (1). Premise (2) states that the proportion of yellow ducks within the population of ducks on the pond that Kendra has observed exactly equals the proportion of yellow ducks within the pond's entire duck population. But neither premise tells us how many of the pond's ducks have been observed by Kendra or how many ducks there are on the pond. And if we were to substitute the phrase "almost perfectly" for "perfectly" in (2), we could produce a reliable hybrid in support of the conclusion that the next duck chosen randomly from the pond will be yellow, without being able to quantify precisely the amount of support provided for that conclusion by (K)'s modified premise set.

Nor must a hybrid involve any kind of sampling or inductive generalization. In the following argument

- (K1) 1. Kali says that all the ducks on the pond are yellow.
 2. Kali always tells the truth.
-
3. All the ducks on the pond are yellow.

premise (2), although independently irrelevant to (3), supplements Kali's testimony to yield a valid hybrid.

Many locutions in English allow for the expression of supplementation relations, although not every occurrence of such a locution will

necessarily perform that function. There is, as always, no substitute for a careful reading of the text in question. The following argument

- (L)
1. Lilith has seen 100 yellow ducks on the pond.
 2. Lilith has seen all but one of the ducks on the pond.
 3. The sample comprised of those ducks on the pond which Lilith has *not* observed is perfectly representative of the pond's entire duck population, with respect to the property of being yellow.
-
4. All the ducks on the pond are yellow.

also makes use of the notion of a perfectly representative sample and is structurally very similar to some of the hybrids we've encountered earlier. But (L) itself is not a hybrid argument. Proposition (1) is the only premise within (L) that converges on (4). Premises (2) and (3), however, form a linked set, since individually they are irrelevant to (4) but together they entail that either all the ducks or none of the ducks on the pond are yellow. Therefore, (2) and (3) together – without any consideration of premise (1) – substantially increase the probability that (4) is true, as they eliminate a vast number of possibilities – namely, any permutation combining yellow with non-yellow ducks within the pond's duck population. The argument's three premises, once pooled, guarantee that (4) is true. So (L) is a valid argument that is neither linked nor convergent. Nor is (L) a hybrid, since it contains no supplementation relation.

(L) illustrates that an argument cannot consistently be viewed as a hybrid by anyone who believes that each item of evidence, to which that argument appeals, emerges from either some convergent premise or some linked set. The two items of evidence to which (L) appeals are individually quite strong. But evidential relations can be extraordinarily weak, and once again a careful reading is often required to avoid a hasty misclassification. In the following argument

- (M)
1. Marissa has seen 100 yellow ducks on the pond.
 2. Marissa has seen all but one of the ducks on the pond.
 3. Each duck on the pond is the same color as at least one other duck on the pond.
-
4. All the ducks on the pond are yellow.

it's easy to see that (1) converges on (4), and that (2) is independently irrelevant to (4). Since (M) is also a valid argument, a reader might therefore jump to the conclusion that the set $\{(2), (3)\}$ supplements (1). But that would be a mistake, because this claim overlooks and is inconsistent with the fact that (3) is independently relevant, even if only very weakly relevant to (4). Premise (3), of course, does not entail that all the ducks on the pond are the same color, or even that a single pair of ducks is yellow. But (3) does eliminate the possibility that any single duck on the pond is a different color from every other duck on the pond. And this ever so slightly increases the probability that (4) is true. So (3), like (1), converges on (4), and the supplementation relation within (M) lies elsewhere.

EXERCISES

- 6.1 Prove that no set that stands in a supplementation relation can be empty.
- 6.2 Prove that if a set S supplements a set S' , then S and S' must be disjoint.
- 6.3 Prove that every hybrid argument provides at least two reasons in support of its conclusion.
- 6.4 Explain how it's possible that a hybrid argument can also be convergent. Illustrate your answer with an example.
- 6.5 Prove that no hybrid argument could be convergent, were we to revise clause (i) of the general definition of the supplementation relation, so that it stated that neither S nor any proper subset of S is relevant to C .
- 6.6 Prove that if a premise P supplements a premise Q , then P and Q cannot form a linked set.
- 6.7 Prove that if a premise P supplements a linked set S , then P supplements no proper subset of S .
- 6.8 Prove that the supplementation relation is asymmetric, i.e., that if a set of premises S supplements a set of premises S' , then S' cannot supplement S .
- 6.9 Prove that the supplementation relation is irreflexive, i.e., that no set can supplement itself.
- 6.10 Explain how it's possible that a hybrid argument can also be linked. Illustrate your answer with an example.

- 6.11 Explain how it's possible that an argument *A* could fail to be a hybrid, even though *A*'s premise set contains at least one supplementation relation.
- 6.12 How would our account of hybrid arguments differ, were we to remove clause (i) from the definition of hybrid arguments offered at the beginning of this section?
- 6.13 Prove that, in (C), no single premise supplements (1).
- 6.14 Prove that, in (D), (3) supplements no single premise.
- 6.15 Prove that, in (E), (3) supplements no single premise.
- 6.16 Construct and diagram a hybrid argument in which three premises supplement a single convergent premise.
- 6.17 Construct and diagram a hybrid argument in which a single premise supplements a three-member linked set.
- 6.18 Construct and diagram a hybrid argument in which a single premise supplements two linked sets.
- 6.19 Construct and diagram a hybrid argument in which a single premise supplements three convergent premises.
- 6.20 Construct and diagram a hybrid argument in which two premises supplement two premises.
- 6.21 Prove that, in (H), (3) supplements no single premise.
- 6.22 Prove that, in (I), neither (2) nor (3) converges on (4).
- 6.23 Prove that, in (I), (2) and (3) do not form a linked set with respect to (4).
- 6.24 Prove that (i) (3) supplements $\{(1), (2)\}$ in (I); (ii) (2) supplements $\{(1), (3)\}$ in (I); (iii) (4) supplements $\{(1), (2)\}$ in (J); and (iv) (4) supplements $\{(1), (2), (3)\}$ in (J). Finally, (v) does (4) supplement (3) in (J)? Justify your answer to (v).
- 6.25 Construct first a valid and then (modalities aside) a reliable argument that are best depicted by diagram (I). Justify your answer.
- 6.26 Is it possible for a single premise to supplement a set of premises that itself contains both a supplementation relation and a linked set? If so, illustrate your answer with an example. If not, explain why not.
- 6.27 For each of arguments (C), (D), (E), (H), and (J) construct a reliable hybrid that exhibits the same pattern of support.
- 6.28 Prove that (K) is a valid hybrid.
- 6.29 Prove that (K1) is a valid hybrid.
- 6.30 Prove that (L) is valid.

- 6.31 Prove that, in (M), (3) converges on (4).
- 6.32 Diagram argument (M), employing modalities as appropriate. Justify your answer.
- 6.33 Construct a reliable argument with 32 premises about the month of December, where each of the first 31 premises converges on the argument's conclusion, and the final premise supplements the set containing the first 31 premises. (Find a way of describing the first 31 premises without writing them all down.)
- 6.34 Construct a valid hybrid argument containing exactly two premises, where the sole supplemented premise is "Every member of my family has committed at least one of the seven deadly sins." Prove that your argument is a valid hybrid.
- 6.35 Construct and diagram a valid argument about the seven deadly sins, in which a single premise supplements six convergent premises. Justify your answer.
- 6.36 Construct and diagram a reliable argument about the seven deadly sins, in which a single premise supplements an eight-member linked set. Justify your answer.
- 6.37 Roll a fair die twice to obtain an ordered pair $\langle m, n \rangle$, where $m < n$.
- (a) Construct and diagram an n -premise hybrid argument about the seven deadly sins that offers m reasons in support of the argument's conclusion, and where the argument's supplemented set is composed entirely of one or more convergent premises. Justify your answer. If it's not possible to complete this exercise with the ordered pair which you have rolled, explain why.
 - (b) Construct and diagram an n -premise hybrid argument about the seven deadly sins that offers m reasons in support of the argument's conclusion, and where the argument's supplemented set is composed entirely of one or more linked sets. Justify your answer. If it's not possible to complete this exercise with the ordered pair which you have rolled, explain why.
- 6.38 Repeat exercise 6.37, where $m = n$.
- 6.39 Repeat exercise 6.37, where $m > n$.
- 6.40 Roll a fair die twice to obtain an ordered pair $\langle m, n \rangle$. Construct a hybrid argument about ducks, which is composed of m supplementing premises and n supplemented premises.

- 6.41 Repeat exercise 6.40 three times; first where (a) each of the n supplemented premises is convergent; next where (b) each of the n supplemented premises is linked; and finally (c) where neither (a) nor (b) obtains. If it's not possible to complete this exercise with the ordered pair you have rolled, explain why.

6.2 Structural Ambiguity

No argument can be a hybrid unless its premise set is relevant to its conclusion. And no normal author can conceive of her own argument as a hybrid unless she believes that a relevance relation of supplementation obtains within that argument's premise set. Since judgments of relevance are often subjective in nature, insofar as they often presuppose a shifting set of personal background beliefs, it's possible for a very wide range of passages – including some we have already discussed in previous chapters – to display a hybrid structure. Reconsider, for example, the argument expressed in the following short text.

(C) (1) Val is a Virgo. (2) All Virgos are vegans. So (3) Val is a vegan.

Earlier we claimed that (C) expresses a linked argument. It's not difficult, however, to imagine a context within which (C) might reasonably express a hybrid. Suppose that, knowing nothing whatsoever about some entity except that she has been given the name "Val," you are told that Val is a vegan. Probably you would want to assign a very low antecedent probability to this claim. By definition, only persons can be vegans, and in addition to possibly being a non-vegan person, Val also might be some kind of entity – say, a rock, an amoeba, or an atomic particle – which can't possibly be a vegan. So the odds are astronomically low that (3) is true.

Now imagine that (1) is true. On the assumption that only persons (or at least entities that have been born) can have a zodiac sign, the truth of (1) vastly increases the probability that (3) is true. So (1) converges on without reliably grounding (3). But since (2), on any of these assumptions, remains independently irrelevant to (3), and since (1) and (2) together ground a valid inference in support of (3), (2) supplements (1), and (C), so conceived, is a hybrid argument.

Many further comparable cases can be produced without difficulty. Suppose that, within the context of a discussion concerning the biology of terrestrial life forms, you encounter the following argument.

(N) (1) Nelly is a newt. So (2) Nelly is anemic.

Once again, the antecedent probability that anyone would likely assign to (2) is very low, if for no other reason than that a great many terrestrial life forms lack a circulatory system. Passage (N) could therefore express a convergent argument if its author is presupposing the claim that, say, most newts are anemic. Given that presupposition, the truth of (1) increases the probability that (2) is true. (In fact, in this scenario, (1) grounds (2).) Premise (1), however, still converges on (2) independently of any such controversial presupposition. If all we know about Nelly, in assessing the antecedent probability that (2) is true, is that she is a terrestrial life form, then knowing that Nelly is a newt increases the probability that (2) is true, given just the more general presupposition that newts have a circulatory system. Given this less controversial background belief, (1) converges upon, without reliably grounding, (2). Therefore, (N) could express an enthymematic hybrid argument, were its author employing a tacit premise (rather than relying upon a presupposition) to the effect that (a) most newts are anemic. On this interpretation, (a) supplements (1).

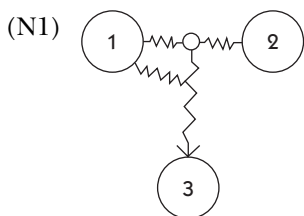
Many arguments with a familiar *modus ponens* structure will therefore be hybrids. Suppose you already believe that most newts are nocturnal. Then in the following argument

- (N1) 1. Nelly is a newt.
 2. If Nelly is a newt, then Nelly is nocturnal.
-
3. Nelly is nocturnal.

you will judge that (1) converges upon and reliably grounds (3). However, since (2) is independently irrelevant to (3), and since (N1) is valid, you should also recognize (N1) as a hybrid argument.

There is no single “objectively correct” diagram of passage (C), passage (N), or passage (N1). An argument diagram displays the microstructure of an argument as it is conceived by its author, and it’s often possible to form a number of defensible competing conceptions of the various relevance relations present within a particular passage.

Someone might insist, for example, that passage (N1) expresses a linked argument. No other interpretation, they might argue, could possibly be cogent (under a certain set of circumstances). Therefore, if this individual is convinced that the author of (N1) does indeed conceive of that passage as expressing a hybrid argument, then she could record her disagreement with that author by diagraming (N1) as follows



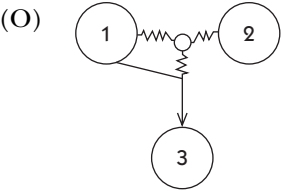
employing both a squiggly convergent arrow emanating from (1) and a squiggly supplementation symbol connecting (1) with (2). (By convention, we won't bother to squiggle the unnumbered node within a squiggly supplementation symbol.) Anyone who claims that (N1) expresses a linked argument must also claim that every premise within that argument is a member of some linked set. In order to remain consistent, therefore, any such person must also deny, both that (1) converges on (3), and that (2) supplements (1) – precisely the denials conveyed by diagram (N1).

It's possible, of course, to believe that an argument, which is expressed as a hybrid, fails to be cogent, without disagreeing with *every* relevance claim expressed within that argument. Someone who believes, for example, that individuals generally ought to be punished for being disobedient to their parents, but that there is an especially strong reason to punish such acts of disobedience when perpetrated by children, might conceive of themselves as expressing a hybrid argument within the following passage.

- (O) (1) Ophelia disobeyed her parents. (2) Ophelia is a child. So
 (3) Ophelia ought to be punished.

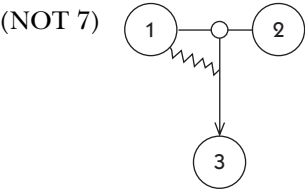
Proposition (2) is independently irrelevant to (3) within (O), as there's no reason to punish someone simply because they're a child. But the author of (O), we've assumed, believes that (2) supplements (1). Some member of that author's intentional audience may rationally

disagree with the claim that (2) supplements (1), without challenging the author's other relevance claim. Such an individual could therefore diagram (O) as follows

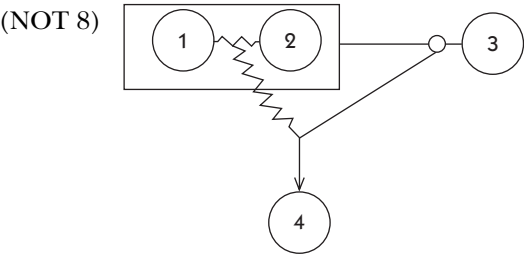


where it's clear, following one of our earlier conventions, that the artist responsible for diagram (O) has not explicitly challenged and to that extent remains open to the possibility that (1) both converges on and grounds (3).

It's possible for an artist to disagree with the author of (O) in numerous other ways. But no artist can consistently deny that (1) converges on (3) while simultaneously believing that (2) supplements (1). Therefore, we'll adopt the convention that the supplementation relation within the diagram of a hybrid argument must be represented by a squiggly symbol, whenever any squiggly symbol appears within that diagram's representation of the argument's supplemented set. So we'll reject (NOT 7), for example,



as an ill-formed diagram, since anyone who denies that (1) converges on (3) within (O) also ought to deny that (2) supplements that convergent premise. Similarly, we'll regard



as ill-formed, since it denies that (1) and (2) form a linked set, without denying that (3) supplements that very linked set. (By convention, we also won't bother to squiggle any rectangles within our squiggly diagrams of hybrid arguments.) Each of (NOT 7) and (NOT 8) records only a single belief – a single “bare denial” – on the part of the artist responsible for these diagrams, and so neither diagram is, strictly speaking, inconsistent. But the diagrams are awkward enough that we want to discourage this type of practice. Anyone who denies that a certain set exhibits a certain kind of relevance structure within a particular argument also ought to deny that that very set, exhibiting precisely that structure, can be supplemented in any manner within the particular argument under consideration. It's possible, in the argument depicted by (NOT 8) for example, that (3) might supplement the set $\{(1), (2)\}$ viewed as containing two convergent premises. But if (1) and (2) are not linked, then (3) cannot supplement $\{(1), (2)\}$ viewed as a linked set.

EXERCISES

- 6.42 Describe scenarios within which passages (E) and (M) of Chapter 5 express hybrid arguments.
- 6.43 Repeat exercise 6.42 with respect to passage (CC) of Chapter 4.
- 6.44 Describe a scenario within which someone might reasonably insist that passage (N1) of this chapter expresses a linked argument.
- 6.45 For each of the following arguments, describe what the author of this argument must believe in order for her to conceive of it as a convergent argument? As a linked argument? As a hybrid argument? In each case, on the supposition that you are a member of her intentional audience, diagram the author's argument, employing squiggly symbols as you see fit.
 - (a) Passage (a) of exercise 5.12.
 - (b) (1) Max is a tiger. (2) All tigers are dangerous. So (3) Max is dangerous.
 - (c) Passage (c) of exercise 5.12.
 - (d) (1) Max quacks. (2) Most creatures that quack are ducks. So (3) Max is a duck.

- (e) (1) Max is your cousin and (2) Max is already married to someone else. So (3) you shouldn't be dating Max.
- (f) (1) Max is over 65 years of age and (2) Max has multiple sclerosis. So (3) Max should not be eligible to receive a heart transplant.
- (g) (1) Max has no employable skills and (2) Max has AIDS. So (3) Max should not be permitted to immigrate to this country.
- (h) (1) Max is qualified to receive a promotion and (2) we've discriminated against Max in the past. So (3) Max should be promoted.

6.3 Epistemic Complications

Suppose that the truth about morality is that no one should ever be punished. Suppose, in particular, that acts of disobedience never provide any reason for punishing the disobedient agent. Then the premise set of argument (O) is irrelevant to its conclusion, and (O), as a matter of fact, is neither a convergent, nor a linked, nor a hybrid argument. But it's possible, as we have seen, for the author of an argument with an irrelevant premise set, such as (O), to consistently conceive of that argument as being either a convergent, linked, or hybrid argument. Typically, we can't determine how an author conceives of the microstructure of her own argument without appealing to her broader epistemic state. But sometimes we simply won't know enough about an author's background beliefs to enable us to arrive confidently at a judgment about the intended structure of her argument. And sometimes her beliefs themselves will be vague enough so as to be compatible with a number of structural options.

Suppose that the author of (O) believes that only children ought to be punished for acts of disobedience toward their parents. This author believes, that is, that the fact that an adult has disobeyed her parents is no reason to punish that adult. And she also believes that although there's no reason to punish someone merely for being a child, other things being equal, any child who disobeys her parents ought to be punished. On the face of it, this seems to constitute a fairly compelling case for viewing (O), as it is conceived by its author, as a linked argument. Clearly, (2) is independently irrelevant to (3) within

(O). And (1) seems to be independently irrelevant to (3) as well, since there's no reason to punish an act of disobedience toward a parent unless that act is committed by a child. And (1) tells us nothing about Ophelia's age. Yet (1) and (2) together, in the author's judgment, ground an inference in support of (3).

Still, there are grounds for exercising caution here. Suppose that the author of (O), as described above, forms a rational belief to the effect that (1) is true. Now, if she also happens to believe that most acts of disobedience toward parents are in fact committed by children, then she probably also believes that it's more likely than not that Ophelia is a child and that, accordingly, other things being equal, Ophelia ought to be punished. So (1) is after all independently relevant to (3) relative to one of the author's own background beliefs, i.e., on the presupposition that most of the acts of disobedience in question are committed by children. On this reading, (O) expresses a hybrid argument, since (2) supplements (1).

The previous two paragraphs assume that the author of (O) possesses a certain assortment of beliefs that commit her to the further belief that (O) expresses a hybrid argument. But it's possible, of course, that this individual hasn't carefully thought through the implications of her total epistemic state. It's possible, that is, that she might sincerely propose (O) as a linked argument, but that she would change her mind were it pointed out to her that some of her other beliefs undermine that proposal. Just as any individual can be mistaken about the content of her own beliefs, so an author can be mistaken in her beliefs about the microstructure of her own argument.

Obviously, this complicates the artist's task of representing the structure of an argument as it is conceived by its author. Where there is some confusion or unclarity about an author's beliefs or intentions, it's best if these issues can be resolved through further dialogue with the author. If, in the course of questioning, an author changes her mind about the microstructure of her own argument, then it's generally most fair to attempt to articulate and respond to the author's most carefully considered judgments. When dialogue is not possible, we must turn, once again, to charitable considerations.

Suppose that evidential considerations cannot decide between a reading of (O) as a linked as opposed to a hybrid argument. On structural grounds, there is some reason to prefer the latter reading,

since, while the linked argument in question is hypervulnerable, the hybrid argument is merely vulnerable, i.e., vulnerable but not hypervulnerable. If premise (2) were eliminated from the hybrid argument (O), then (1) would still continue to provide relevant information in support of (3). In fact, since the independent relevance of (1) to (3) is based in this case on the presupposition that most acts of disobedience toward parents are committed by children, the hybrid argument (O) also contains a merely vulnerable grounding relation, since (1) on its own (arguably) still reliably grounds (3). Therefore, if (2) were challenged by some audience member, an argument closely related to the hybrid (O) would still hold out some prospect of being cogent for that individual. Challenging either (1) or (2) within the linked interpretation of (O), however, would destroy the relevance of the premise set to the argument's conclusion.

The reasoning offered in the last paragraph, in favor of interpreting (O) as a hybrid rather than a linked argument, is often available, since no hybrid argument can be hypervulnerable; therefore, there's always some reason to prefer a hybrid argument over a competing hypervulnerable argument. But given the various ways in which the premise set of a hybrid argument, as well as the various proper subsets of that premise set, can be relevant to that argument's conclusion, there are few other interesting generalizations that can be made about the vulnerability or invulnerability of hybrid arguments. Suppose, however, that *A* is a hybrid argument that contains a single supplementing premise as well as a single supplemented set. Suppose further that the supplemented set, on its own, would provide an invulnerable (vulnerable) argument in support of *A*'s conclusion. Then it follows, provided each premise within *A* participates in *A*'s sole supplementation relation, that *A* itself is also invulnerable (vulnerable).

And since there are no conceptual constraints on how much stronger the supplementary reason within a hybrid argument must be in comparison with the argument's non-supplementary reason(s), one can't make any interesting generalizations about the vulnerability or invulnerability of the grounding relations within hybrid arguments – except to say that (a) as is the case with all valid, compact arguments, the grounding relation within a valid, compact hybrid argument must be hypervulnerable; and (b) as is the case with all

non-compact arguments, the grounding relation within a non-compact hybrid argument cannot be hypervulnerable.

The probability that an author might have superficial beliefs about the microstructure of her own argument – beliefs that she would revise on more careful reflection – increases as the complexity of the arguments under consideration increases. We claimed earlier that (E) is a hybrid argument in which premise (3) supplements the set $\{(1), (2)\}$.

- (E)
1. Daphne's pet quacks.
 2. Daphne's pet has webbed feet.
 3. All those creatures who both quack and have webbed feet are ducks.
-
4. Daphne's pet is a duck.

On this interpretation, the claim that Daphne's pet quacks is independently relevant to and increases the antecedent probability that the author of (E) would assign to the claim that Daphne's pet is a duck. That much is relatively straightforward. Suppose, however, that the author of (E) believes that both (1) and (3) are true. Do these two claims together *further* increase her assessment of the probability that Daphne's pet is a duck? They wouldn't if the author of (E) believes that, say, within the population of Daphne's pets, it's as probable that a pet which quacks has webbed feet as that a pet which quacks doesn't have webbed feet. However, the antecedent probability of (4) would increase further, given that both (1) and (3) are true, if the author of (E) believes, of any one of Daphne's pets that quacks, that it's very likely that that pet has webbed feet. On this latter interpretation, (3) also supplements (1); and further probing of the author's epistemic state may similarly reveal that (3) supplements (2) as well. Of course, it's likely that the author of (E) simply wouldn't have considered these questions, since she would most likely be more interested in the argument's principal supplementation relation – the relation that validly grounds an inference in support of (4). Therefore, the author of (E) may be unaware that, relative to her own epistemic state, one or more non-principal supplementation relations are embedded within this argument.

While this would not affect the overall structural classification of argument (E), in other cases, authors may overlook evidentiary

relations that do indeed impact upon an argument's overall classification. Consider argument (P), for example.

- (P)
1. Penelope is a duck.
 2. Penelope is yellow.
 3. Penelope is malnourished.
 4. Penelope is Rh-negative.
 5. Almost all yellow, malnourished Rh-negative ducks are anemic.
-
6. Penelope is anemic.

Your immediate impulse, even if you are the author of (P), is probably to classify this argument as being linked. On the assumption that (P) is normal and therefore is believed by its author to be compact, premise (5) must play an essential role in providing evidence in support of (6). And although (5) is independently irrelevant to (6), by linking (5) to the argument's four preceding premises to create a single linked premise set, you can readily produce, not only a compact argument, but also a reliable inference in support of that argument's conclusion.

The problem, of course, is that the author of (P) may be in possession of additional beliefs that are inconsistent with the proposal that (1) through (5) constitute a linked set. If (P) is a linked argument, then no proper subset of its premise set can be relevant to (6). Suppose, however, that the author of (P) also believes that most yellow, Rh-negative ducks are malnourished. Call this proposition *Q*. Or that most Rh-negative ducks are anemic. Call this proposition *R*. If either *Q* or *R* is indeed a presupposition of argument (P), then the author of (P) must believe that some proper subset of that argument's premise set is relevant to the argument's conclusion. For the set {(1), (2), (4), (5)} is relevant to (6), on the presupposition that *Q* is true. And the set {(1), (4)} is relevant to (6), on the presupposition that *R* is true.

Anyone who goes to the trouble of presenting a five-premise argument about anemic ducks is probably in possession of a great many relevant background beliefs about ducks. So there is nothing untoward in supposing that the author of (P) believes propositions along the lines of *Q* and *R*. Nor is there any tension between an author's possession of these beliefs and her having presented an argument such

as (P). Argument (P) is presumably of interest to her just because, as is suggested by the wording of (5), that argument's entire premise set grounds (6) more reliably than does any proper subset of that set. So it's not surprising that someone proposing (P) would focus on the strongest grounding claim derivable from propositions (1) through (5), and might temporarily overlook weaker evidentiary relations. However, if the author of (P) does believe that these weaker relations do indeed obtain, then she cannot consistently present (P) as a normal linked argument. Depending upon exactly which background propositions its normal author believes, (P) must be some kind of a hybrid. (Alternatively, the author of (P) could present (P), to a less learned audience, as an abnormal, linked argument.)

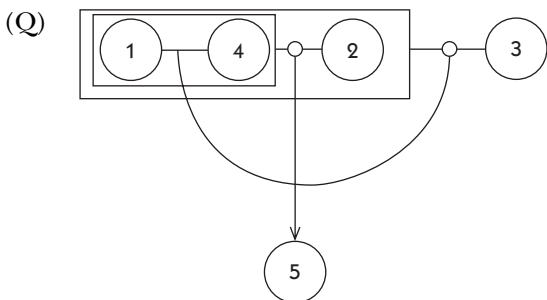
One lesson we can draw from illustrations of this sort is that it is not as easy, as some may have originally thought, for individuals to propose arguments with a particular kind of microstructure. If the author of (P), for example, simply has *no opinion* about whether any relevance relations obtain between her conclusion and any proper subsets of the propositions within her premise set, then, although she would still be able to present (P) as an embryonic argument, she would not be able to conceive of or present (P) as a normal, linked argument. In order to believe that (P) is linked, one must believe that no proper subset of that argument's premise set is relevant to its conclusion.

An author is therefore sometimes precluded from being able to offer a certain kind of argument in virtue of the fact that she is in possession of too few beliefs about the argument in question. In other cases, an author's epistemic state may be rich enough, yet at the same time flexible enough, so as to be able to support two or more incompatible microstructural interpretations. Consider the following analogical argument about two ducks, for example.

- (Q)
1. Queenie and Beanie have the same diet.
 2. Queenie and Beanie receive the same amount of exercise.
 3. Queenie and Beanie are the same age.
 4. Queenie is a healthy duck.
-
5. Beanie is a healthy duck.

Argument (Q) cites three properties that are shared by Queenie and Beanie and, on the basis of the information that Queenie is a healthy

duck, extrapolates that Queenie and Beanie share the further property of being healthy as well. It's clear that no premise within (Q) is independently relevant to (5), and that (Q) is not a convergent argument. But it's also clear that premise (4) might plausibly support different relevance relations by interacting with the argument's remaining premises in different ways. Each of the sets $\{(1), (4)\}$, $\{(2), (4)\}$ and $\{(3), (4)\}$ provides relevant information in support of (5). So it's plausible to conceive of (Q) as a linked argument containing three two-premise linked sets, with three separate reasons pooled in support of (5). But it's also plausible to claim that the set $\{(2), (3)\}$ supplements the linked set $\{(1), (4)\}$. Or that premise (3) alone supplements the set $\{(1), (2), (4)\}$ conceived as containing the two linked sets $\{(1), (4)\}$ and $\{(2), (4)\}$. Or that, as in the following diagram,



premise (2) supplements the linked set $\{(1), (4)\}$, all three of which are supplemented in turn by premise (3). Nor does this list exhaust the number of plausible hybrid interpretations.

No two of these four interpretations are compatible with one another, in the sense that each makes specific claims about the structure of argument (Q) that the other three interpretations deny. The second interpretation, for example, is the only interpretation that claims that (Q) offers exactly two (pooled) reasons in support of its conclusion. And only on the fourth interpretation, diagramed above, does (Q) incorporate a non-principal supplementation relation. But the four interpretations are compatible with each other in another important sense. It's not only possible, but plausible, to suppose that the author of (Q) believes, of each of the individual relevance relations articulated within each interpretation, that that relation in fact obtains. So it's possible that the author of (Q) might be willing to endorse *any* of these interpretations as a fair and (roughly) accurate

interpretation of her argumentative proposal; especially since the different interpretations do not affect the strength of the argument's grounding claim. In fact, the author of (Q) may have self-consciously proposed this argument with more than one such interpretation in mind.

However, even if this is so, she (or we) might still prefer certain interpretations on structural grounds. Each of the four arguments described in the second last paragraph is vulnerable, since in each case the elimination of (4) from (Q) would destroy all relevant support for the argument's conclusion. But the linked argument is preferable because it is, in a sense, less vulnerable than any of the hybrids. (Recall that earlier, with respect to (O), we recommended, on structural grounds, a hybrid over a linked interpretation.) Eliminating just premise (1) from the first or third hybrid would destroy all relevant support for (5); and eliminating both (1) and (2) from the second hybrid would have the same result. (That argument, therefore, has the property of second-order vulnerability.) But in neither case would all relevant support for (5) be destroyed within the linked argument. So, in situations where an author has reason to worry about challenges to her premise set, there's some reason to opt for a construal of (Q) as a linked argument.

In most of the arguments we've considered so far within this chapter, it's been fairly clear, from the propositional content of those arguments, whether or not they likely contain a supplementation relation. When it hasn't been clear, we've usually been able to readily articulate a set of background beliefs or conditions under which the specific passage in question would likely express a hybrid argument. Frequently, however, this degree of clarity will be unattainable. Consider, for example, argument (R).

- (R) 1. Ramona has seen nothing but yellow ducks on the pond.
 2. There are exactly 100 ducks on the pond.
-
3. All the ducks on the pond are yellow.

(1) is certainly independently relevant to (3), and (2) is apparently not independently relevant to (3). So, on the face of it, (R) has exactly the kind of structure that we would expect from a hybrid argument. Unfortunately, we may have a very difficult time making sense of (R)

as a hybrid, or even as any kind of normal argument, as it's far from clear, working from the propositional content of (R) alone, how (2) is supposed to assist in the production of relevant information in support of (3). We can't determine, from (R)'s premise set, the number of yellow ducks that Ramona has observed on the pond, and we can't judge whether Ramona has (likely) seen a majority, a substantial proportion, or even a representative sample of the ducks on the pond. And 100 seems to be too indeterminate a number – one that is neither obviously very small nor obviously very large – as to shed any light, one way or the other, on how we should interpret the strength of the evidence cited within (1), at least not without some further background information. So it's just not clear what role (2) is supposed to play in this argument. As artists, we should be prepared for the possibility that we will not always be able to resolve interpretational puzzles of this sort. But, of course, if it's reasonable to view (R) as a normal argument, charity instructs us to search for an interpretation according to which (2) is believed to play an essential role in providing evidence in support of (3).

Suppose, for example, that we are intimately familiar with the epistemic state of the author of (R). Suppose, in particular, that we are aware that this individual believes that, for years, Ramona has visited the duck pond at the zoo on a daily basis. Then this information helps us to determine the strength of the evidence that (1) alone brings to bear upon (3); and it also helps us to understand how (R) might express a hybrid argument. The fact that there are only 100 ducks on the pond – and not, say, tens of thousands – increases the probability that, over the course of hundreds of visits, Ramona has observed a highly representative sample, if not literally all of the ducks on the pond. Relative to this background belief, then, (2) clearly supplements (1).

However, even with an intimate knowledge of an author's epistemic state, we should be prepared for the possibility of puzzlement and rational disagreement. Suppose we hold constant the author's background belief, cited above, but alter premise (2) to read that there are exactly 10,000 ducks on the pond. The background belief continues to clarify our assessment of the independent relevance of the information contained within the argument's first premise. But what are we now to make of the role of (2) within this argument? Should

we say that (2) still supplements (1) because it rules out the possibility that there are millions of ducks on the pond and therefore increases the probability that, over the course of hundreds of visits, Ramona has observed a representative sample of the pond's duck population? Or should we say that the number 10,000 is so large that it actually *weakens* the evidence that would otherwise be provided by (1) for (3) (thereby creating what we might call a *negative* hybrid)? After all, most people would reasonably assume that a duck pond at a zoo would be able to accommodate far fewer than 10,000 ducks. Or should we regard the claim that there are 10,000 ducks simply as irrelevant noise, since it neither adds to nor detracts from the evidence cited in (1)? Artists and authors can certainly rationally disagree over these difficult questions, and there may very well be no fact of the matter that could even in principle settle such a dispute. After careful reflection, different individuals may reach reflective stability with respect to different propositions concerning the manner, if any, in which (2) affects the probative force of (1) within this modified argument.

Finally, consider one further complicating factor. Return to argument (R) and suppose that, as before, its author believes that for years Ramona has visited the duck pond at the zoo on a daily basis. And suppose as well that the author of (R) possesses the additional belief that Ramona is shortsighted. Given this author's entire epistemic state, there is a sense in which (2) *both* adds to *and* detracts from the evidence for (3) independently cited within (1). For, as noted earlier, that there are only 100 ducks on the pond suggests that there's a good chance that Ramona has observed a representative sample of ducks. At the same time, that there are as many as 100 ducks on the pond suggests that the pond is large enough that there is a serious concern, given Ramona's shortsightedness, that she might have systematically failed to observe a number of the pond's more reclusive ducks, including perhaps ducks of a different species and therefore possibly of a different color, which tend to avoid human contact. So given this author's entire epistemic state, (2) pulls us in two different directions. The author of (R) and an artist intimately familiar with that author's beliefs may agree on every detail mentioned so far and yet rationally disagree as to whether, *on balance*, (2) supplements (1), and that therefore (R) is a hybrid argument; or (2) detracts from the evidence cited within (1), and that therefore

(R) is a negative hybrid; or (2) is irrelevant noise. Once again, there may be no fact of the matter that could in principle settle this dispute.

EXERCISES

- 6.46 Describe a scenario within which premise (2) supplements premise (1) within argument (O). Justify your answer.
- 6.47 Is the hybrid that you discussed in exercise 6.46 valid or reliable? Is it invulnerable or merely vulnerable? What type of grounding relation does it contain? Justify your answers.
- 6.48 Prove that no hybrid argument can be hypervulnerable.
- 6.49 Suppose that a hybrid argument A contains a single supplemented set S' . Suppose further that S' , on its own, would provide a hypervulnerable argument in support of A 's conclusion. Explain how it's possible that A itself could be a merely vulnerable argument. Illustrate your answer with an example.
- 6.50 Repeat exercise 6.49, substituting "invulnerable" for "merely vulnerable."
- 6.51 Suppose that a hybrid argument A contains a single supplementing premise, as well as a single supplemented set S' . Suppose further that S' , on its own, would provide an invulnerable argument in support of A 's conclusion. Prove that A itself is also an invulnerable argument, on the further assumption that each premise within A participates in A 's sole supplementation relation.
- 6.52 Suppose that a hybrid argument A contains a single supplemented set S' . Suppose further that S' , on its own, would provide an invulnerable argument in support of A 's conclusion. Suppose further that each premise within A participates in A 's sole supplementation relation. Explain how it's possible that A itself could be a vulnerable argument. Illustrate your answer with an example.
- 6.53 Suppose that a hybrid argument A contains a single supplementing premise, as well as a single supplemented set S' . Suppose further that S' , on its own, would provide an invulnerable argument in support of A 's conclusion. Explain how it's possible that A itself could be a vulnerable argument. Illustrate your answer with an example.

- 6.54 Repeat exercise 6.51, substituting “vulnerable” for “invulnerable.”
- 6.55 Repeat exercise 6.53, substituting “vulnerable” for “invulnerable,” and “invulnerable” for “vulnerable.”
- 6.56 Diagram argument (P) as a normal hybrid: first on the assumption that its author believes proposition Q , next on the assumption that she believes proposition R , and finally on the assumption that she believes both Q and R . Justify your answers, incorporating additional assumptions as you see fit.
- 6.57 Describe a scenario within which the author of (P) might choose to present that argument as an abnormal, linked argument.
- 6.58 Prove both that (2) supplements $\{(1), (4)\}$ and that (3) supplements $\{(1), (4), (2)\}$ in diagram (Q).
- 6.59 Diagram five different plausible interpretations of argument (Q). How many of these arguments are vulnerable? How many are hypervulnerable? How many contain a vulnerable grounding relation?
- 6.60 Suppose that we alter argument (R) so that its second premise states that there are exactly ten ducks on the pond. Describe a scenario within which this revised argument is a hybrid. Justify your answer.
- 6.61 Suppose that the author of (R) believes both that Ramona is shortsighted and that she visits the duck pond at the zoo on a daily basis. Within this context, is (R) a hybrid argument? Justify your answer.
- 6.62 Suppose we say that a set of premises S *negatively supplements* a set of premises S' , with respect to a conclusion C , just in case (i) S is irrelevant to C , (ii) S' is relevant to C , and (iii) S and S' together provide a weaker reason in support of C than does S' alone; and that an argument A is a *negative hybrid* just in case A contains a negative supplementation relation. Construct a negative hybrid modeled upon argument (R), invoking contextual features as you see fit. Justify your answer.
- 6.63 Construct a hybrid argument that contains the proposition that Toni always tells the truth on Tuesdays.
- 6.64 Add one or more premises to the argument you constructed in exercise 6.63 so that the resulting argument is a negative hybrid. Justify your answer.

- 6.65 For each of the following categories, construct a reliable, compact hybrid argument with the properties cited.
- (a) an invulnerable argument with an invulnerable grounding relation
 - (b) an invulnerable argument with a merely vulnerable grounding relation
 - (c) an invulnerable argument with a hypervulnerable grounding relation
 - (d) a merely vulnerable argument with a merely vulnerable grounding relation
 - (e) a merely vulnerable argument with a hypervulnerable grounding relation
- 6.66 For each of the categories listed in exercise 6.65, decide whether it's possible for there to be a valid, compact hybrid argument of that type. If so, construct an example. If not, explain why not.
- 6.67 Construct modal (non-squiggly) diagrams of the following arguments. Justify your answers.
- (a) (1) I've seen 100 yellow ducks on the pond. (2) Most ponds have no more than 100 ducks. So (3) all the ducks on the pond are yellow.
 - (b) (1) I've seen nothing but yellow ducks on the pond. (2) On most ponds, all the ducks are the same color. So (3) all the ducks on the pond are yellow.
 - (c) (1) I've seen 100 yellow ducks on the pond. (2) The pond is east of Eden. (3) No pond east of Eden has more than 100 ducks. So (4) all the ducks on the pond are yellow.
 - (d) (1) My duck is yellow. (2) All non-migratory yellow ducks live in Denmark. (3) My duck lives in Damascus. So (4) my duck is migratory.
 - (e) (1) I've seen 100 yellow ducks on the pond. (2) Every duck that I've seen on the pond has been a Mallard. (3) The pond is east of Eden. (4) Few ponds east of Eden have more than 100 ducks. (5) Few ponds east of Eden have any non-Mallard ducks. So (6) all the ducks on the pond are yellow.
 - (f) (1) Prince Edward Island is pretty. (2) British Columbia is pretty. (3) There are exactly two provinces in Canada. So (4) every Canadian province is pretty.

- (g) (1) Ontario is not ugly. (2) Quebec is not ugly. (3) No Canadian province west of Ontario is ugly. So (4) no Canadian province is ugly.
- (h) (1) Ontario is not ugly. (2) Quebec is not ugly. (3) No Canadian province west of Ontario is ugly. (4) There are no Canadian provinces east of Quebec. So (5) no Canadian province is ugly.
- (i) (1) All Canadian provinces west of Quebec are pretty. (2) All pretty provinces are praiseworthy. (3) There are no Canadian provinces east of Quebec. So (4) every Canadian province is praiseworthy.
- (j) (1) Quebec is pretty. (2) Newfoundland is pretty. (3) There are exactly five Canadian provinces. (4) Canadian provinces east of Ontario are, in most respects, fairly typical of most Canadian provinces. So (5) most Canadian provinces are pretty.

6.4 Moral Hybrids

Our interest in classifying arguments, according to their structural properties, transcends any mere taxonomical concern. The greater the number of structural options open to an author, the more flexibility she has, in principle, to respond to charges that her argument fails to be cogent. And audience members may all too hastily lay these charges precisely because of a lack of appreciation on their part of the different ways in which an author may conceive of the microstructure of her own argument.

Enthymematic hybrid arguments are very common in moral contexts, for example. Since it's widely believed that promises create obligations, arguments of the following sort are very familiar.

- (S) 1. Sabrina promised to meet you at noon.

2. Sabrina has a moral obligation to meet you at noon.

While it's easy to see that (1) converges on (2) within (S), it's also not difficult to imagine numerous ways in which Sabrina may be relieved of any obligation to meet you at noon, even though she promised to do so. Suppose, for example, that on her way to meet you at noon, she

witnesses an accident at 11:45 and is the only person available to rush an injured child to the nearest hospital. If helping the injured child is, from the moral point of view, more important than keeping her noon appointment and if, as some philosophers have argued, you can't be morally obligated to be in two different places at the same time, then once the accident has occurred Sabrina is no longer morally obligated to meet you at noon.

An audience member who conceives of (S) as a single-premise convergent argument may therefore acknowledge that (1) is relevant to (2) while claiming that the argument fails to ground its conclusion, since for any number of reasons Sabrina may be relieved of the obligation that arose initially from her promise. What this response fails to consider, of course, is the possibility that (S) may be a hybrid argument. If the author of (S) is operating on the tacit understanding that (a) "there are no extenuating circumstances in effect" – i.e., no additional circumstances of the sort that could have any bearing on Sabrina's moral responsibilities – then (a) supplements (1) to produce a valid hybrid argument. In this context, any concerns about the cogency of (S) would be directed more appropriately, not to the question of whether (S) is grounded, but whether (a) is true.

In discussing (S), we encountered a situation in which, through no fault of her own, Sabrina was relieved of a moral obligation. Sometimes, however, individuals can play a more active and perhaps morally questionable role in determining the content of their moral obligations. Suppose that Sabrina ought to meet you at noon today because yesterday she promised to do so. Suppose further that at 10:30 this morning Sabrina predicts that, because she is so incredibly lazy, she won't be able to keep the appointment. Not being an entirely irresponsible person, however, she reasons as follows.

- (T)
1. If I won't meet my friend at noon today, I ought to phone her now to tell her that I'm not coming.
 2. I won't meet my friend at noon today.
-
3. I ought to phone her now to tell her that I'm not coming.

Although (T) appears to have true premises and the form of a *modus ponens* argument, (T) may not be cogent. Certainly there's something

to be said in favor of the inference from (1) and (2) to (3). By phoning you now, Sabrina saves you the anxiety and inconvenience associated with a failed rendezvous. At the same time, one could also argue that laziness is no excuse, and that the truth of the antecedent of proposition (1) does not allow one, in certain contexts, to infer the consequent of (1) as the argument's conclusion. On this line of reasoning, proposition (2), though true, describes an outcome that is morally forbidden. It's true, at 10:30 in the morning, that Sabrina won't meet you at noon only because she's lazy, and laziness cannot relieve one of one's obligations. The most salient moral feature of this example is that Sabrina has made a promise she ought to keep. Therefore, you can't infer a conclusion that contradicts that claim, on the basis of morally forbidden premises. Rather than phoning you and reneging on her primary obligation to meet you at noon, Sabrina ought to muster the strength required to overcome her laziness so that she can honor her promise.

Fortunately for Sabrina, she might be able to respond to the charge that (T) is not cogent by claiming that (T) is an enthymematic hybrid. Recall that Sabrina predicted, at 10:30 in the morning, that (2) is true because she believed that she wouldn't be able to keep the noon appointment out of laziness. Now, suppose that Sabrina's laziness is such a serious problem and such a deeply ingrained character trait that it's literally true, at 10:30 in the morning, that she is not *able* to keep the noon appointment. Since there's a widespread belief that morality cannot demand the impossible of moral agents, Sabrina may believe, at 10:30, that she's no longer morally obligated to meet you at noon. So not meeting you at noon is no longer morally forbidden. In proposing argument (T), therefore, Sabrina may have tacitly assumed a proposition to the effect that (a) "It's not morally forbidden that I not meet my friend at noon." Proposition (a), while independently irrelevant to (3), supplements the linked set {(1), (2)} to produce what can plausibly be viewed as a grounded argument in support of (3). On this line of reasoning, Sabrina's primary obligation to keep her promise, once it becomes unsatisfiable, for whatever reason, gives way to a secondary obligation to cancel the upcoming appointment.

Not everyone will agree that (T), conceived as a hybrid, is cogent. (T) raises but one of many complicated and controversial issues

regarding the nature of cogent reasoning within moral discourse. As might be expected, there is considerable disagreement even over such a basic question as how best to describe our obligation to keep promises. The renowned moral intuitionist W. D. Ross, for example, has argued that actions have a multitude of “right-making” and “wrong-making” characteristics, and that there is a “prima facie” obligation to perform any action that possesses one or more right-making characteristics, but an “actual” or “absolute” obligation to perform an action only if its right-making characteristics “outweigh,” on balance, any of its wrong-making characteristics. Moral reasoning within this framework can readily assume something like the following form.

- (U) 1. Ursula made a promise at midnight.
 2. There is a prima facie obligation to keep one’s promises.
 3. The act that Ursula performed at midnight possesses exactly one morally relevant property.
-
4. Ursula has an actual obligation to keep her promise.

(U) is a hybrid argument because, although (3) is independently irrelevant to (4), (3) supplements the linked set $\{(1), (2)\}$ to produce a valid argument in support of (4).

Moral reasoning that is couched, like argument (U), in the language of prima facie obligations is typically presumptive or defeasible in nature. That is, an act *A* becomes presumptively right (wrong) insofar as it possesses one or more “right- (wrong)-making” characteristics, and this presumption may ground an inference in support of the claim that *A* is actually obligatory (forbidden), unless that inference is defeated by the presence, within *A*, of weightier “wrong- (right)-making” characteristics. Presumptive reasoning provides a natural home for hybrid arguments, since, in any number of ways, a supplementing (set of) premise(s) can address the issue of (the presence or absence or possibility or likelihood of) defeating or countervailing evidence.

Premise (a) of argument (S), for example, essentially denies the existence of any countervailing considerations that could relieve Sabrina of the specific obligation, generated by her promise, to meet you at noon. Especially interesting hybrid arguments can be constructed that

incorporate moral claims about the defeasibility conditions pertaining to entire classes of actions. The following serial argument, for example, adapted from a study by Robert Holmes entitled *On War and Morality*, offers evidence in support of the controversial position known as antiwar pacifism.

- (V) 1. Violence against innocent persons is presumptively wrong.
 2. War inevitably involves the killing of innocent persons.

3. War is presumptively wrong.

- (W) 3. War is presumptively wrong.
 4. The moral presumption against war cannot be defeated.

5. War is absolutely forbidden.

It's fairly clear that (V) is a linked argument, possibly containing an unexpressed premise to the effect that killing innocent persons constitutes a form of violence against them.

More germane to our present concerns, however, is the fact that (W) is arguably a hybrid. Premise (3) is independently relevant to (5) since (3) establishes that war *is* absolutely forbidden so long as the moral presumption against war, articulated within (3), cannot be defeated; (4) claims that any such attempt to defeat the moral presumption against war will indeed fail. Together, (3) and (4) ground a valid inference in support of (5). Therefore, to establish that (W) is a hybrid, we need only settle upon an interpretation of (4) whereby that proposition is independently irrelevant to (5). This can be accomplished by reading (4) as a kind of conditional that neither asserts nor presupposes the propositional content of (3). Rather, (4) claims merely that *if* there is a moral presumption against war, then any attempt to defeat that presumption will fail. Furthermore, since Holmes's arguments are themselves designed to resolve such fundamental issues as whether and why there is a presumption against war, there is presumably no contextual presupposition in effect concerning even the likelihood of any such presumption. This is a moral argument against war from first principles, as it were. Therefore (4) alone fails to converge on the argument's conclusion.

EXERCISES

- 6.68 Explain why argument (O), conceived as a two-premise hybrid argument, is invalid.
- 6.69 Construct a valid hybrid wherein a single premise supplements the two propositions that occur within the premise set of (O).
- 6.70 Prove that proposition (a) supplements (1) in (S).
- 6.71 Prove that proposition (a) supplements the set $\{(1), (2)\}$ in (T).
- 6.72 Is the argument (Ta) grounded? Justify your answer.
- 6.73 Prove that proposition (3) supplements the set $\{(1), (2)\}$ in (U).
- 6.74 Assess the cogency of the following argument, presented by Max on Monday: (1) If I steal my neighbor's Toyota on Tuesday, I ought to return it by Thursday. (2) I will steal my neighbor's Toyota on Tuesday. So (3) I ought to return the stolen Toyota by Thursday. (Introduce additional contextual features, as you see fit.)
- 6.75 On the assumption that each of the following passages expresses at least one normal hybrid argument directed to you as a member of the author's intentional audience, identify the macrostructure and construct a diagram of that argument. Employ modalities and squiggly symbols to the extent that you feel confident in doing so. Identify any noteworthy presuppositions of the arguments in question and justify your diagrams as you see fit.
- (a) (1) I prefer the Marx Brothers to Sylvester Stallone. (2) Ticket prices at each theater are comparable. So (3) I ought to see *Duck Soup* instead of *First Blood*.
- (b) "(1) I promised my girlfriend to take her to see the latest Woody Allen movie tonight. (2) She'll be really disappointed if I don't go to that movie with her, and (3) I don't have any excuse for not doing so. So I guess (4) I should take her to see that movie tonight." – An example from Robert Pinto and Tony Blair, *Information, Inference and Argument*
- (c) "(1) Vincent has had a lot of alcohol. (2) Vincent has taken a lot of aspirin at the same time. So (3) Vincent is likely to have hallucinations." – An example adapted from Izchak Schlesinger et al., *The Structure of Arguments*

- (d) “(1) Egypt has over 60 million inhabitants. (2) Only a small strip of land near the Nile is inhabited. So (3) Egypt’s population density is very high.” – An example adapted from Izchak Schlesinger et al., *The Structure of Arguments*
- (e) “When a sanitation crew arrives at a meatpacking plant, usually around midnight, it faces a mess of monumental proportions. Three to four thousand cattle, each weighing about a thousand pounds, have been slaughtered there that day.” – Eric Schlosser, *Fast Food Nation*

6.76 Locate an interesting, recently published argumentative text and repeat exercise 6.75, employing that passage. Be sure to identify the source of your text.

6.5 Ignorance

The apparatus that we have developed within this text can easily be applied to the study of the traditional fallacies. When presented with an allegedly fallacious argument, we’re now in a position to be able to test whether that argument is (conceived to be) convergent, linked, or hybrid, as part of a larger search for an interpretation according to which the argument in question is normal. The search for a normal interpretation may, to our surprise, actually yield a cogent interpretation. At the very least, it should enhance our understanding of the manner in which the argument’s author imagines that her premises provide evidence sufficient to justify belief in her conclusion.

We can illustrate these points by briefly examining argumentative appeals to ignorance that raise the interesting question of whether the complete absence of evidence for a proposition can ever constitute evidence for the negation of that very proposition. Many philosophers have claimed that arguments of the form

(X) 1. We have no evidence that proposition *P* is true.

2. *P* is false.

for example, commit a fallacy of irrelevance. Suppose *P* is the proposition that there are at least ten planets orbiting the most distant star in the Andromeda galaxy. If we have literally no evidence to suggest that *P* is true, then we have literally *nothing* to rely upon when it comes

to ascertaining P 's truth value. No evidence is just that – no evidence. And since it's not possible to argue cogently from a non-existent evidential base, the truth of (1) can neither justify belief in (2) nor even increase the probability that (2) is true. Argument (X) might therefore be represented more perspicuously as follows

(X1) 1.

2. P is false.

since this form more vividly conveys the idea that nothing can conceivably follow from nothing.

Nonetheless, people frequently do argue from ignorance. If these arguments are normal, then their authors must believe that the premise sets in question do indeed provide relevant support for their respective conclusions. In the case of (X), one explanation for this belief is that people may be deceived, by the linguistic form of proposition (1), into misconstruing a statement regarding a lack of evidence as itself a description of relevant information. The specific wording of (1), plus the fact that (1) does express some kind of a claim about evidence, may mislead us. Another perhaps more plausible explanation, however, is that (1) is relevant to (2), either relative to certain background presuppositions or in conjunction with certain tacit premises.

Suppose, for example, that P is the proposition that "there is a moose standing beside you." Then the complete lack of evidence that P is true does indeed ground an inference in support of the claim that P is (very likely) false. For if there were a moose standing beside you, you would almost certainly be aware of its presence. So argument form (X) seems to have cogent instantiations.

In general, let's say that a proposition P is *transparent*, within a context C , just in case, if P were true in C , then anyone present within that context would almost certainly be aware, effortlessly and immediately, of overwhelmingly strong evidence in support of P . The proposition that there is a moose standing beside you is transparent within the context of a small, well-lit seminar room populated by people with well-functioning sensory organs. So, where P is the proposition that there is a moose standing beside you, (X) plausibly expresses a cogent, single-premise convergent argument, on the presupposition that P is a transparent proposition. An author arguing in this manner could

plausibly claim that it's reasonable for her to expect that her audience will recognize on their own, upon being presented with argument (X), that *P* is transparent, i.e., that the proposition that "there is a moose standing beside you" is the kind of proposition for which anyone would almost certainly, effortlessly and immediately, have overwhelming evidence, were that proposition true.

This point about transparency is far from trivial, since the cogency of certain arguments from ignorance will hinge precisely upon whether it's rational to believe that a certain proposition is transparent (within a certain context). Suppose that *P* is the proposition that "ghosts exist." Individuals may rationally disagree over the claim that *P* is transparent, depending upon what they believe about the nature of ghosts, their mode of existence, their desires and capabilities, and the ability of humans to perceive evidence of a ghostly presence. Anyone who wants to use argument form (X) to establish that ghosts do not exist might therefore be well-advised to link premise (1) with an additional explicit and independently irrelevant premise stating that the proposition that "ghosts exist" is transparent; and to be prepared to provide additional evidence for either of these premises if, as is likely, they should be challenged.

But not every argument from ignorance requires a presupposition or premise concerning transparency. Sometimes we argue cogently from the absence of a certain body of evidence only after having conducted a deliberate but unsuccessful search for that very evidence. Consider, for example, the proposition *P* that "there are mice in the attic." *P* is not transparent, since mice are generally furtive and inconspicuous creatures that do not impinge themselves upon our senses the way moose do. Even when mice exist in our immediate vicinity, many people remain blissfully ignorant of evidence of their existence – unless, that is, they put some effort into conducting a search for such evidence.

This suggests that we may be able to argue cogently from a state of ignorance, in support of the negation of a non-transparent proposition, depending upon the causal history of our ignorance. If you've searched for evidence of mice in your attic and you've come up empty-handed, that does support the claim that there are no mice in your attic. Better yet, however, is a *competent* search, one carried out in a thorough, careful, and responsible fashion by someone who

knows where to search and what to search for. (Think of the character played by Christopher Walken in the movie *Mousehunt*.) Accordingly, an argument from ignorance may assume the following more robust form.

- (Y) 1. We have no evidence that proposition *P* is true.
 2. We have conducted a competent search for evidence that *P* is true.

3. *P* is false.

Where *P* is the proposition that “there are mice in the attic,” (Y) is arguably a cogent linked argument. Neither premise is independently relevant to (3), but together they provide enough evidence to ground a reliable inference in support of that proposition. (Without the word “competent” in (2), (Y) would likely pass the R but fail the G condition.)

By parity of reasoning, where *P* is the proposition that there are at least ten planets orbiting the most distant star in Andromeda, we may or may not be able to argue cogently from our lack of evidence for *P*, depending upon the source or explanation of our ignorance. If we have no evidence that *P* is true because no one has ever bothered to investigate this matter, then nothing follows from our lack of evidence (since, of course, *P* is not transparent). If, however, our ignorance results from a competent search for evidence that *P* is true, then we can argue cogently, along the lines of (Y), that *P* is false.

Not every instantiation of argument form (Y) is cogent, however. In the last paragraph we tacitly assumed that there is a rough-and-ready consensus on what would constitute a competent search for planetary bodies, and that we have the technological means to carry out such a search within Andromeda. Suppose, however, that someone were to employ (Y) to argue in support of the claim that ghosts do not exist. It's likely, in this case, that (Y) would fail to be cogent for many audience members. Some would challenge the claim that it even makes sense to speak of a competent search for evidence that ghosts exist. Others would rationally disagree with the claim that (2) is true by challenging the author's conception of the conditions that would need to be satisfied in order for any search to be conducted in a competent fashion. Individuals of either sort could be justified in claiming that,

for them, (Y) fails the T condition. These kinds of methodological disagreements are of course much less likely to arise within the physical sciences, such as astronomy for example.

Nonetheless, even within very conventional and tightly regulated fields of study, an argument of form (Y) may still be challenged, not for having false or irrelevant premises, but for failing to provide evidence sufficient to justify belief in its conclusion. Let *P* be the proposition that “dark matter exists,” and suppose that scientists have conducted a competent search for evidence of dark matter. Suppose further (what’s actually false) that, in their search, they’ve come up empty-handed. Because dark matter is, by its very nature, extraordinarily difficult to detect, our lack of evidence that *P* is true arguably does not justify us in concluding that dark matter does not exist. For if dark matter does exist, that a competent search would fail to uncover evidence of its existence is precisely what we would expect. So, in this case, (Y) fails the G condition. It would be better, on this line of reasoning, simply to suspend judgment on the matter.

Let’s say, in general, that a proposition *P* is *elusive*, within a context *C*, just in case, if *P* is true, then it’s very *likely* that a competent search, within *C*, for evidence that *P* is true would fail to uncover any such evidence; and that a proposition *P* is *discernible*, within a context *C*, just in case, if *P* is true, then it’s very *unlikely* that a competent search, within *C*, for evidence that *P* is true would fail to uncover any such evidence. The terms “elusive” and “discernible” are therefore contrary, not contradictory terms. In most contexts, the proposition that dark matter exists is an elusive proposition, whereas the proposition that there are mice in the attic is a discernible proposition.

Accordingly, an argument of form (Y) can be challenged on the grounds that *P* is an elusive proposition. And (Y) can be transformed into a stronger argument from ignorance by explicitly eliminating the possibility that *P* is elusive, as follows.

- (Z)
1. We have no evidence that proposition *P* is true.
 2. We have conducted a competent search for evidence that *P* is true.
 3. *P* is a discernible proposition.
-
4. *P* is false.

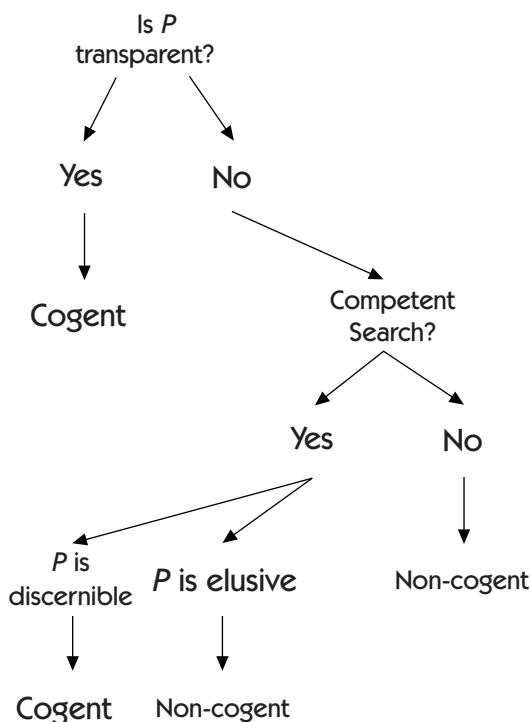


Figure 6. Arguments from Ignorance

Suppose that P is the proposition that “your spouse is a millionaire.” Within most contexts, P is a discernible proposition. And so, within most contexts, (Z) is arguably a cogent hybrid, where the independently irrelevant premise (3) supplements the linked set $\{(1), (2)\}$, and where the three premises collectively ground a reliable inference in support of (4).

It is easy to imagine situations within which there could be rational disagreement over whether a certain proposition is elusive, discernible, or neither elusive nor discernible. So whether an argument of form (Z) can be cogent, where P is the proposition that ghosts exist, for example, will depend in large part on whether it can be rational to believe, both that one can conduct a competent search for evidence of ghosts, and that P is a discernible proposition. We won’t attempt to resolve these difficult questions here, however. It’s enough, for our

purposes, that we now have a deeper appreciation of some of the various ways in which a normal author can argue sensibly, if not always cogently, from ignorance. It's enough if we've managed to become better listeners.

EXERCISES

- 6.77 Let P be the proposition that ghosts exist. Explain why the premise that " P is transparent" is independently irrelevant to the claim that ghosts do not exist.
- 6.78 Explain why (2) is independently irrelevant to (3) within argument (Y), where P is the proposition that there are mice in the attic.
- 6.79 Explain why (3) is independently irrelevant to (4) within argument (Z), where P is the proposition that there are mice in the attic.
- 6.80 On the assumption that you are a member of the author's intentional audience, diagram each of the following normal arguments, identifying any noteworthy presuppositions and employing modalities and squiggly symbols as you see fit. Justify your answers.
- (a) Argument (X), where P is the proposition that there is a moose standing beside you.
 - (b) Argument (X), where P is the proposition that your television set's picture tube is not working properly.
 - (c) Argument (Y), where P is the proposition that there are at least ten planets orbiting the most distant star in Andromeda.
 - (d) Argument (Y), where P is the proposition that your cat is killing the neighborhood chipmunks.
 - (e) Argument (Z), where P is the proposition that there are mice in the attic.
 - (f) Argument (Z), where P is the proposition that you are allergic to local environmental pollutants.
- 6.81 What conclusion, if any, follows from the lack of evidence reported in the closing sentence of the following passage? Justify your answer. "The simplest test of [cosmic] topology is to look at the arrangement of galaxies. If they lie in a rectangular lattice,

with images of the same galaxy repeating at equivalent lattice points, the universe is a 3-torus. Other patterns reveal more complicated topologies. Unfortunately, looking for such patterns can be difficult, because the images of a galaxy would depict different points in its history. Astronomers would need to recognize the same galaxy despite changes in appearance or shifts in position relative to neighboring galaxies. Over the past quarter of a century researchers . . . have looked for and found no repeating images within one billion light-years of the earth.” – *Scientific American*, 2002 Special Edition

- 6.82 For each of the following propositions P , decide whether you are able to construct an argument from ignorance that concludes that P is false, and that is cogent for you. If so, identify the macrostructure of your argument and then diagram it. If not, explain why not. Justify your answers and, in each case, explain whether, in your judgment, P is a transparent, discernible, or elusive proposition.
- (a) Ghosts exist.
 - (b) There are leprechauns in Ireland.
 - (c) Intelligent extraterrestrials have visited planet Earth.
 - (d) Smoking causes cancer.
 - (e) Shark cartilage prevents cancer.
 - (f) Exposure to violent entertainment causes violent behavior.
 - (g) My professor is incompetent.
 - (h) Time travel is impossible.
 - (i) My partner has been unfaithful.
 - (j) I am HIV-positive.
 - (k) I am insane.
 - (l) Fermat’s last theorem.
 - (m) God exists.
- 6.83 Is it possible to construct a cogent argument from ignorance involving a non-transparent proposition P that is neither discernible nor elusive? If so, illustrate your answer with an example. If not, explain why not.
- 6.84 Select an argument form that has traditionally been recognized as being fallacious. Compose an approximately ten-page (double-spaced) argumentative essay describing a number of scenarios within which a normal author might plausibly

employ that argument form to express a variety of cogent arguments.

- 6.85 Describe a scene in a film wherein some fictional character superficially appears to commit one of the traditional logical fallacies. Compose an approximately ten-page (double-spaced) essay arguing that this character is in fact a normal author of a cogent argument.

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